



The
Comprehensive
Literacy Plan

Pennsylvania



Keystones
to
Opportunity



Keystones to Opportunity



pennsylvania
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The Pennsylvania Comprehensive Literacy Plan: Keystones to Opportunity

Part I. Introduction and Overview

Pennsylvania Comprehensive Literacy Plan: Vision and Mission

Given the expectations for students graduating from Pennsylvania schools in the 21st century and the need for all students to be “career and college ready” at the end of grade 12, educators will need to rethink the ways by which they approach literacy instruction at all levels, including early learning for students ages birth through five years of age. Students must be able to read more challenging and complex text; moreover, they will need experiences that enable them to use literacy as a tool for learning the content in each of the academic disciplines (i.e., science, social studies, math, and English language arts). The availability of technology has created a need for new ways of thinking about how students learn, as students of today are digital natives, comfortable with the internet, video games, cell phones, etc. (Prensky, 2001). Furthermore, although Pennsylvania has always valued and supported early learning initiatives, much more has been learned about how to incorporate language and literacy into early childhood programs. Likewise, the importance of literacy across curricula has begun to assume more importance with the recognition that literacy skills are important for learning academic content.

A review of the 2010-11 State Level Reading PSSA Results (Pennsylvania Department of Education [PDE], 2011) for Pennsylvania schools illustrates the importance of developing a comprehensive, coherent, and well-articulated literacy plan that can provide the direction for successful literacy instruction in 21st century schools. Although on average, close to 70% of the students in Pennsylvania scored at or above proficiency in reading on state assessment tests, Pennsylvania schools must continue to improve literacy instruction so that a greater number of students achieve proficiency. Moreover, these averages do not take into consideration the differences in proficiency among various subgroups.

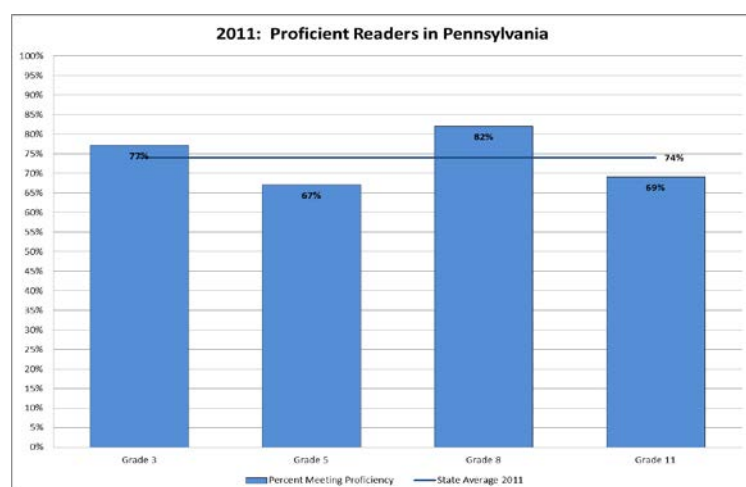


Figure 1. Student Proficiency in Pennsylvania for 2011

Figure 1 indicates that close to 70% of students in PA scored at or above proficiency in reading on the Pennsylvania State System of Assessment in 2011; however, fewer students in Grades 5 (67%) and 11 (69%) scored at or above proficiency than those in Grades 3 (77%) and 8 (82%).

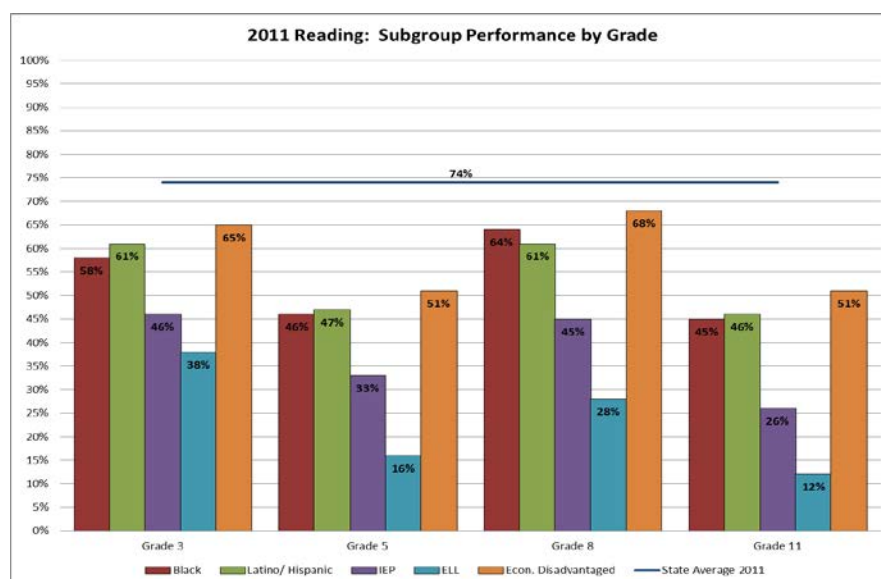


Figure 2. Subgroup Performance by Grade

Figure 2 indicates that achievement for students of poverty and those identified as Black, Latino/Hispanic, English Language Learners, or eligible for special education, although improving, is still a concern and must be addressed if we are to educate all students to be college and career ready (PDE, 2010).

Vision. All students in Pennsylvania from birth through Grade 12 will become well-educated citizens with a command of literacy that prepares them for the challenges of the 21st century and enables them to achieve their personal and professional goals.

Mission. The Pennsylvania Comprehensive Literacy Plan (PaCLP) will provide guidance to stakeholders about their roles in developing an integrated, aligned, and comprehensive set of literacy experiences for students. The plan will identify and describe (1) essential evidence-based notions about the **content** of literacy (birth-Grade 12) and (2) **processes** by which all stakeholders (e.g., parents, care-takers, educators, community members, etc.) involved in students' literacy learning can facilitate that learning in a coherent and consistent manner.

The Audience

The PaCLP provides guidance for the Pennsylvania Department of Education (PDE) and its constituents, including educators at the local and regional levels, parents, and community members. It describes ways by which parents, caretakers, librarians, and other community members and agencies can facilitate student learning. Specifically, the plan identifies important content, processes, and resources that will enable teachers, administrators, and university personnel to plan, develop, and evaluate instructional programs that support equitable and high quality literacy instruction for all students.

Definition of Literacy

In the *Academic Standards for Reading, Writing, Speaking, and Listening* (2011), the Pennsylvania State Code defines literacy as follows:

The language arts--Reading, Writing, Speaking, and Listening — are unique because they are processes that students use to learn and make sense of their world. Students do not read “reading;” they read about history, science, mathematics and other content areas as well as topics that interest and entertain them. Similarly, students do not write “writing;” they use written words to express their knowledge and ideas and to inform or entertain others. Because of the unique nature of the language arts, all teachers in a school use Reading, Writing, Speaking, and Listening...[to] assist their students in learning them through multiple classroom situations in all the subject areas. (§ 4.83)

Although many dictionaries define literacy as the ability to read and write, the definition of literacy has evolved and expanded over the past several decades. In the 21st century, literacy includes the ability to locate, evaluate, use, and communicate through a wide range of resources including text, visual, audio, and video sources. In other words, literate individuals demonstrate independence; build strong content knowledge; respond to the varying demands of audience, task, purpose, and discipline; comprehend as well as critique; value evidence; use technology and digital media strategically and capably; and come to understand other perspectives and cultures ([Common Core State Standards Initiative](#), 2010). To develop individuals with such 21st century literacies requires instruction that is integrated and helps students understand how to access, evaluate, synthesize, and contribute to information ([National Council of Teachers of English](#) [NCTE], 2007). To ensure academic success, such instruction must occur in the context of all academic disciplines and is the responsibility of all teachers.

Pennsylvania Framework for Literacy

Pennsylvania has a history of commitment to quality literacy instruction. The Pennsylvania Literacy Framework (Pennsylvania Department of Education [PDE], 2000) was the third in a series of documents that has guided literacy instruction since 1979. These initial documents describe a model of literacy that indicates its multi-faceted nature as meaning-making, social, language-based, and human or personal. The PaCLP provides an update to those previous documents, building on the research evidence in the field.

Standards in Pennsylvania

Pennsylvania sets high expectations to ensure that students are prepared to succeed in a competitive global environment. Standards describe what students should know and be able to do from early childhood through high school. The PDE convened stakeholders to

develop content and process standards in fourteen different subject areas. The Pennsylvania Academic Standards for Reading, Writing, Speaking and Listening (2011) are divided into three separate levels: Pre-K – Grade 3, Elementary (Grades 3 – 8), and Secondary (Grades 8 – 12). In addition to the PA Academic Standards for Reading, Writing, Speaking and Listening, Pennsylvania has also adopted the Common Core State Standards that are aligned closely with the current academic standards.

These standards are designed to meet the needs of all students and serve as the foundation for this comprehensive literacy plan. The Standards that guide literacy instruction in Pennsylvania are briefly described below.

Standards for Reading, Writing, Speaking and Listening (Birth – Grade 12)

The Learning Standards for Early Childhood are designed to address the needs of young children. They are divided into Infant-Toddler, Pre-Kindergarten and Kindergarten. The Learning Standards for Early Childhood were revised in 2009 to ensure that they are more consistent, better aligned across ages, and better connected to the academic standards. The PDE Learning Standards for Early Childhood include clearly sequenced skills from infancy through kindergarten, an emphasis on the process of learning, a greater infusion of active learning strategies, and recognition of the impact of culture and diversity on learning.

The Pennsylvania Academic Standards for Grades PreK through 12 indicate what students should know and be able to do at the end of each grade level in the areas of listening, reading, writing, and speaking. The standards provide the targets for instruction and student learning essential for success in all academic areas, not just language arts. All teachers are expected to use the standards as they define the skills and strategies employed by effective readers and writers. The standards provide clear expectations in the following areas:

- Reading independently
- Reading, analyzing and interpreting text
- Reading, analyzing and interpreting literature-fiction and non-fiction
- Types and quality of writing
- Speaking and listening
- Research
- Characteristics and functions of the English language
- Information, communication and literacy technology

Common Core State Standards

Pennsylvania has adopted the Common Core State Standards ([Common Core State Standards Initiative](#), 2010). The Common Core State Standards (CCSS) are closely aligned with the existing PA Academic standards. The CCSS requires a greater emphasis on informational text, text complexity, digital literacy, discussion and argumentation. The PDE has developed a “transition” plan to assist schools in the implementation of the CCSS and to make any needed curricular changes.

Pennsylvania’s Standards Aligned System

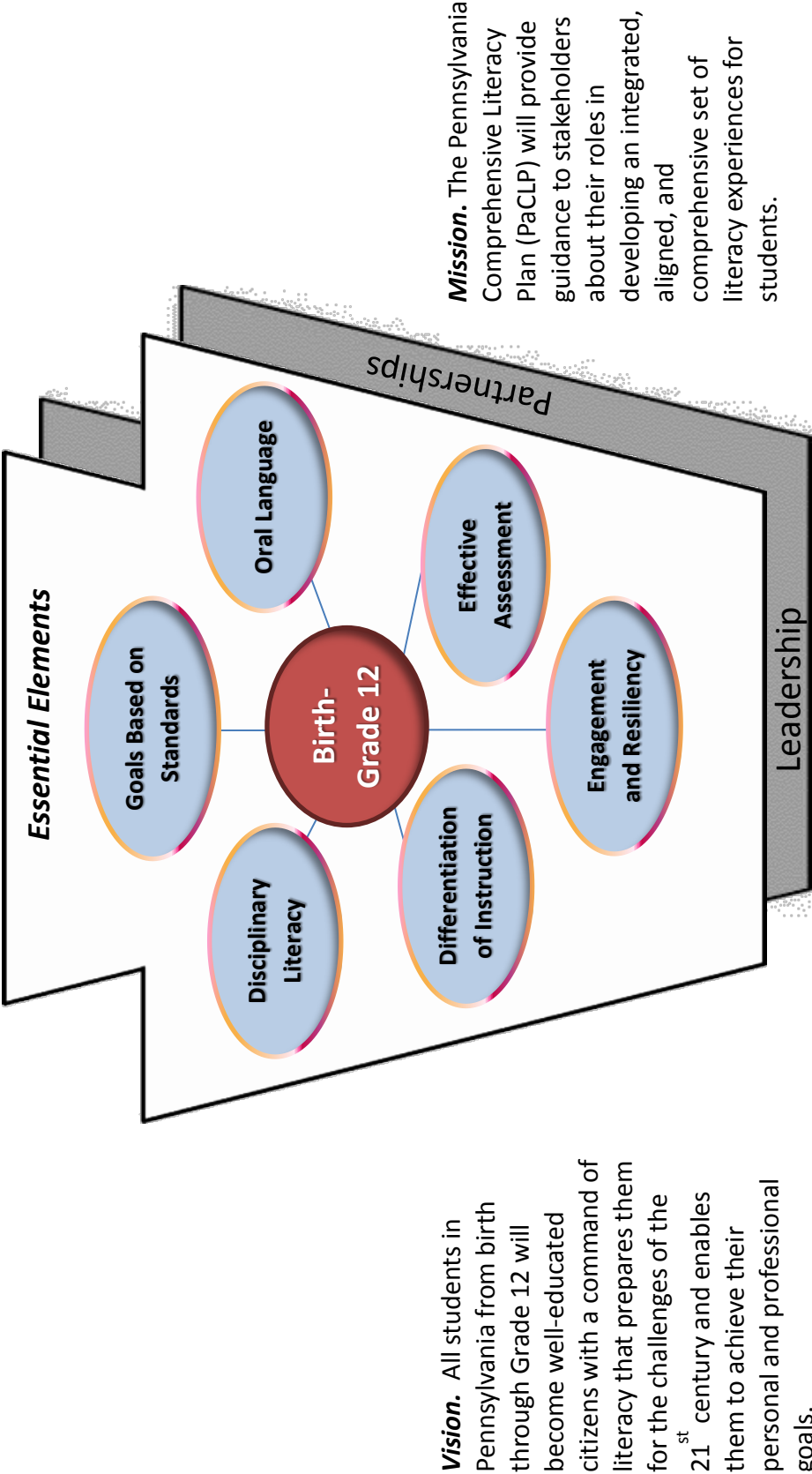
In order to more fully describe the elements within an educational system that are necessary for high levels of student achievement, Pennsylvania developed an online resource: the [Standards Aligned System \(SAS\)](#). The SAS website provides resources for understanding and for implementing six critical components of the educational system. The intentional interaction of the articulated components increases the likelihood of student success. The elements include:

- Curriculum Framework
- Clear Standards
- Fair Assessments
- Instruction
- Interventions
- Materials and Resources

Overview of Plan

In Part II, the Guiding Principles that represent the beliefs and assumptions underlying the PaCLP are described. In Part III, the Essential Elements that provide the building blocks for the PaCLP are identified and explained. Each of the Essential Elements includes a definition and rationale for its inclusion, implications for instruction, and a list of resources for educators. As this dynamic plan continues to be developed, specific examples of cases, videos, and audio material will be provided to assist educators in their instructional efforts. In Part IV, specific information about the resources, policies, and documents available to constituents is provided, as is a set of recommendations for implementing the PaCLP. In that section, an action plan for implementation is also described.

Pennsylvania Comprehensive Literacy Plan: **Keystones to Opportunity**



Guiding Principles that support the PaCLP

Literacy is the foundation for all learning	Multiple perspectives: linguistic, cultural and personal
High expectations for all learners	Evidence-based decision making
	21st Century teaching

Part II: Guiding Principles

The five guiding principles described below represent the beliefs and assumptions underlying the PaCLP.

Five Guiding Principles

1	Literacy is a critical foundation for all learning and serves as a “keystone” for opportunity and success. The Standards for literacy must promote high level learning for all students to ensure that they are prepared to meet the challenges of the 21st century. Because literacy is an important skill in itself and serves as a tool for learning, it is an essential at all levels (Birth-Grades 12). Moreover, to enhance literacy learning of students, there must be shared responsibility of educators, parents and caretakers, and the broader community.
2	Student learning, motivation, and access to educational opportunities are increased when linguistic, cultural, and personal experiences are valued, understood, represented in the curriculum and classroom practice, and used to help students make connections between what they know and what they are learning. Multiple perspectives and experiences provide opportunities for students to learn about their own as well as the culture of others.
3	There must be high expectations for all learners and a belief that all are capable of gaining literacy skills that enable them to be successful as adults. Instruction must address the full range of learners, must be differentiated to meet each child’s needs, and requires a well-integrated system connecting general, compensatory, gifted, and special education.
4	Evidence-based decision-making must be at the heart of all instructional decisions related to literacy development.
5	Educators must be prepared to teach effectively in the schools of the 21st century and be provided with continuing professional development support that enables them to be lifelong learners.

Guiding Principle 1

Literacy is a critical foundation for all learning and serves as a “keystone” for opportunity and success. The Standards for literacy must promote high level learning for all students to ensure that they are prepared to meet the challenges of the 21st century. Because literacy is an important skill in itself and serves as a tool for learning, it is an essential at all levels (Birth-Grades 12). Moreover, to enhance literacy learning of students, there must be shared responsibility of educators, parents and caretakers, and the broader community.

As mentioned previously, although literacy can be defined simply as the ability to read and write, it is much more than that. For example, the National Assessment of Adult Literacy (White & Dillow, 2003) defines literacy as being both task-based and skill-based. Task-based literacy refers to one’s ability to use literacy to function in society, achieve one’s goals, and develop one’s knowledge and potential.

Skill-based literacy refers to those foundational skills (e.g., word reading) and higher-level literacy skills that one needs to accomplish literacy tasks. In the PaCLP, we address both foundational skills and task-based skills, recognizing the importance of helping students gain the competence with literacy that enables them to apply their skills in authentic situations, both in and out of school. As Schmoker (2011), indicates, “authentic literacy is integral to both what and how we teach” (p. 11). Literacy is, in fact, the “spine” that holds everything together (Phillips & Wong, 2010).

In the PaCLP, all of the language arts—reading, writing, speaking, and listening—are considered essential capabilities of literate adults. Moreover, literate adults in the 21st century are those who are prepared to engage in a diverse, quickly changing “flat world” in which skills with technologies, problem solving, collaboration, and analysis are central to individual and community success (Friedman, 2005). In order to meet this goal of preparing the literate adult, teachers of content have a responsibility to understand how literacy affects the learning of their discipline and how they can use literacy instruction to strengthen students’ learning in their classrooms. Schools must work with parents, caretakers, and communities so that there is an understanding of the importance of their roles in building language and literacy skills and enhancing students’ motivation to engage in literacy tasks.

The demands in the 21st century are great:

- More jobs will require some postsecondary education, and this expectation will require that graduates be able to read and comprehend challenging content and apply their reading to problem solve (Haynes, 2011).

- Technology is changing the way we read, write, teach, and learn. Students of today, described as “digital natives,” are surrounded by technology and they think and learn in different ways (Prensky, 2001). Technology, therefore, is not only changing the way that students learn, but also the nature of schools and teaching.
- Because of technology, students will need to have a greater sense of themselves as members of the global community. They will need to have a deeper understanding of and appreciation for peoples of various cultures. They will also need the language and literacy skills that enable them to compete successfully in an economy that is influenced by world events.

Yet, too many students in the U.S. today dropout of high school, or fail to qualify for entry to or graduate from institutions of higher learning (McLoyd, 1998). All students must have opportunities to learn, access to teachers, and the academic support they need in order to increase the numbers of graduates who are college and career ready (Haynes, 2011). In other words, as described in the [Position Statement by the International Reading Association’s Commission on Adolescent Literacy](#) (Moore, Bean, Birdyshaw, & Rycik, 1999),

“Adolescents entering the adult world in the 21st century will read and write more than at any other time in human history. They will need advanced levels of literacy to perform their jobs, run their households, act as citizens, and conduct their personal lives. They will need literacy to cope with the flood of information they will find everywhere they turn. They will need literacy to feed their imaginations so they can create the world of the future.” (p. 3)

Such an approach to literacy instruction should be consistent, aligned, and shared by all—not only those responsible for teaching the language arts, but also those who teach academic subjects such as science, social studies, and math. It requires a commitment from parents and caregivers to provide students with the experiences, world knowledge, and dispositions they need to be successful literacy learners. Furthermore, it requires that those involved in agencies or entities responsible for promoting literacy learning (e.g, libraries, community centers, etc.) become knowledgeable about *how* they can promote literacy for those they serve. It requires that the institutions that prepare teachers address the need for all those entering the field of education to become knowledgeable about how to best provide literacy instruction in their respective fields. Finally, it requires that schools and the agencies that support them (i.e., intermediate units, PaTTAN, and PDE) provide the professional development opportunities that assist teachers in developing and implementing the very best literacy instruction for students in PA schools.

Guiding Principle 2

Student learning, motivation, and access to educational opportunities are increased when linguistic, cultural and personal experiences are valued, understood, represented in the curriculum and classroom practice, and used to help students make connections between what they know and what they are learning. Multiple perspectives and experiences provide opportunities for students to learn about their own as well as the culture of others.

Language and culture shape learning styles and behaviors. Students of various cultural and linguistic backgrounds bring diverse cultural orientations to learning unique to what they have experienced in their homes (Philips, 2003). Students influenced in more collectivist cultures may be more oriented toward collaboration, group interaction, and oral discourse, while students raised in individualistic cultures may be more oriented toward personal achievement,

competition, and ownership (Trumball, Rothstein-Fisch, & Greenfield, 2000). . A multi-cultural education approach that explicitly values diversity and supports culturally contextualized teaching will help students access curriculum (Gay, 2004; Charity-Hudley & Mallinson, 2011). Immigrant students educated in their home countries may also bring with them the varied histories, knowledge, and experiences specific to that country and its education system. By using the rich “funds of knowledge” students bring to the classroom, educators can foster the attainment of new knowledge while validating the students’ home knowledge (Gonzalez, Moll & Amanti, 2005).

Where Pennsylvania Stands: In 2009-10, 50,738 ELL students were enrolled in PA schools. There are over 200 language groups represented in PA schools, with Spanish as the most commonly spoken non-English language. (U. S. Department of Education, 2010)

Valuing the language of the home is important to the success of students. Language is tied to culture and to identity; It is tied to family and rich histories. According to Fishman (2007), culture is expressed through language, and when language is lost, those things that represent a way of life, a way of valuing, and human reality are also lost. However, if you talk to members of a particular culture about language loss, they do not address the symbolism of the language but rather talk about the sacredness of language, the sense of kinship associated with language, and their moral commitment to language (abstract). In other words, in the classroom, native language can be utilized as a resource for clarification of difficult tasks and as a means of enriching the learning experience for all students. Specific information about language variation and language development of English Language Learners follows:

- **Language Variation** (e.g., African American English, Southern English Varieties, Chicano English). Research in the field of linguistics maintains that language variation is normal, and that while educators may view non-standardized varieties of English as informal, mis-educated, or error-ridden, differences in non-standardized English varieties of English, such as African American English (AAE), are “not the same as language deficits, errors, mistakes or confusions. Non-standardized varieties of English are as rule-governed, patterned and predictable in their linguistic structure as are standardized varieties” (Charity-Hudley & Mallinson, 2011, p. 2). Research shows that listeners often rank speakers of standardized varieties as being smarter and of a higher status while speakers of non-standardized varieties of English are often viewed as less intelligent, having less social status, and are often associated with more negative traits than standardized speakers of English (Lippi-Green, 1997). Non-standardized English speakers are also shown to perform lower on standardized tests (Charity-Hudley & Mallinson, 2011). Valuing and understanding the diverse linguistic experiences and skills of culturally and linguistically diverse students is a first step to engaging students and supporting their success; however, additional preparation in understanding language variation and development is important for all educators in supporting the success of culturally and linguistically diverse students.
- **English Language Learners (ELLs) and Language Development.** ELLs have to learn content and language simultaneously; thus, they have “double the work” (Short & Fitzsimmons, 2007). According to [World-Class Instructional Design and Assessment](#), second language development occurs along a language development continuum ranging from entering (level 1) to bridging (level 5), each with specific linguistic characteristics. In order for ELLs to progress in language development and content mastery, they must have access to meaningful language and concepts (Lau v. Nichols, 1974; Krashen, 2004). Meaningful access to the curriculum requires that students have access to reading materials and content at their proficiency level, thereby providing multiple opportunities for success.

Where Pennsylvania Stands: Growth in ELL population in PA schools from 1997-98 to 2007-08 was 114.5%. The total population growth was -1.1% for the same period.
<http://www.ncela.gwu.edu/t3sis/state/pennsylvania/data>

Misperceptions of language variation, second language development, and cultural orientations to school can lead to detrimental experiences and lowered opportunity for students who are culturally and linguistically diverse, as evidenced by over-representation of African Americans and

ELLs in Special Education, lower track classes, and dropout rates (Coutinho & Oswald, 2006). This disparity has critical implications for educators who, in order to help eliminate the achievement gap (more recently referred to as an “opportunity gap”), must understand the importance of

language and culture as they impact school interactions, literacy development, identity development, and academic achievement (DeShano da Silva, Huguley, Kakli, & Rao, 2007).

When educators believe the language variation students bring to the classroom is wrong, their beliefs have negative effects on the students' identity and learning and may suggest something is wrong with the students or their family (Delpit, 2006). At the same time, having an appreciation for and understanding of language variation does not "preclude the need for students to be taught Standard or Academic English, not as a replacement for their home, first, or indigenous languages, but as a complement to them." (Gay, 2010, p. 84) Smitherman (2006) summarizes as follows:

....I know of no one, not even the most radical minded linguist or educator (not even the Kid herself!) who has ever argued that American youth, regardless of race/ethnicity, do not need to know the language of wider communication in the U.S. (aka "Standard English"). (p. 142)

Guiding Principle 3

There must be high expectations for all learners and a belief that all are capable of gaining literacy skills that enable them to be successful as adults. Instruction must address the full range of learners, must be differentiated to meet each child's needs, and requires a well-integrated system connecting general, compensatory, gifted, and special education.

Foundational to this principle is the commitment to providing all children access to high quality literacy instruction that is both evidence-based and aligned to a progression of well-articulated standards. Teachers are faced with educating groups of students who continue to become more and more diverse (Capps et al., 2005). Consequently, formal instruction in literacy is often strongly impacted by economic disadvantages and language barriers, as well as a myriad of physical, mental, social, and emotional challenges often presented by many students in this diverse group.

Since the early 1970s, Section 504 of the Rehabilitation Act and the Education for All Handicapped Children Act (later transformed into the Individuals with Disabilities Education Act) has required that schools integrate students with disabilities into the mainstream of education as much as possible. In addition to students with disabilities, this group includes an increasing number of students from diverse cultural backgrounds (Hodgkinson, 2002). For example, an analysis of the 2009 results from the report of the Program for International Student Assessments (PISA) states that "30% of the schools in the US have more than a quarter of their students from

immigrant backgrounds” (Organisation for Economic Co-operation and Development (OECD), 2010, p. 35). Cultural differences displayed by these students are often incompatible with the existing school cultures and directly influence teaching and learning (Gay, 1994). Many of these same students face language barriers that further complicate learning to read and write in English. Additionally, socioeconomic disadvantages may affect the learning of a significant number of students. Although the US does not necessarily have a greater proportion of socio-economically disadvantaged students than other advancing countries, “socio-economic disadvantage translates more directly to poor educational performance in the United States than is the case in many other countries” (OECD, 2010, p. 35). The result is an increasingly diverse population of students, many of whom face learning challenges and ALL of whom must achieve the highest levels of literacy skills possible.

First and foremost, ensuring these high levels of literacy requires high literacy expectations for ALL students, including those with learning challenges. This requirement necessitates a shared belief that all students have potential and therefore CAN acquire such skills. Results from the PISA analysis suggest “schools and countries where students work in a climate characterized by expectations of high performance and the readiness to invest effort, good teacher-student relations, and high teacher morale tend to achieve better results, on average across countries...” (OECD, 2010, p. 38). Oakes (2003) refers to these expectations as a “college-going school culture” and contends that in such a culture,

educators believe that all of their students can learn at very high levels. A school culture that expects all students to spend time and effort on academic subjects and emphasizes that effort will pay off fosters high levels of academic achievement. (p.2)

Moreover, it has been clearly demonstrated that students’ performance is affected by those around them (Edmonds, 1986; Levin, 1988; Rutter, Maughan, Mortimore, & Ouston, 1979; Slavin, Karweit, & Madden, 1989). In addition, depending on the context, teacher perceptions are not always accurate and at times underestimate the literacy capabilities of students from diverse backgrounds (Ready & Wright, 2011). Such students often lack confidence in their own abilities to read and write; therefore, they put forth very little effort. Conversely, students who are led to believe in their own abilities put forth more effort, which results in greater success. According to Mehan (2007), all other conditions for success flow from this culture of high expectations.

Unfortunately, simply believing in and conveying students’ potential to acquire literacy skills is not enough. It is equally important that teachers understand and value learning differences in literacy acquisition. In addition to providing high quality literacy instruction, they must be prepared to intervene with instructional supports that enable students to meet the high expectations that are set for them. Teachers must recognize that background knowledge,

motivation, and purpose play an important role in literacy acquisition of all students, particularly students with learning challenges.

Finally, high expectations and intervention strategies in the general education classroom often must be coupled with specialized supports from outside the regular classroom (Oakes, 2003). Well-prepared specialists must be available to assess specific literacy needs, recommend targeted interventions, and employ highly intensive instruction when required. A coordinated system of care and support must begin early and continue as the child progresses through school. While early intervention is key to future success, it is also true that personalized literacy instruction for many students must continue throughout high school. Plans for students need be no less robust at the high school level as they are in the early years. Once in place, ongoing monitoring and adjusting are necessary to ensure continued growth and avoid eventual plateaus or even digressions in performance that educators often come to expect.

In sum, teaching literacy skills to all students is an immeasurably complex task. For the growing numbers of students with learning challenges, this challenge begins with high expectations for each individual student coupled with an artful coordination of a tiered system of strategies and services. No one entity working on its own or in isolation can provide the necessary programming. For this reason, careful attention must be given to ensuring that instructional supports and services are woven into a cohesive and coherent plan—a plan that spans the grades and intentionally addresses significant transitions along the way. Policy makers, administrators, and teachers must share the commitment to understanding diversity and its impact on literacy acquisition, fostering high expectations for all students, and providing a concomitant system of personalized support for students with diverse literacy needs. This ever-increasing need calls for well-coordinated efforts that begin with teacher preparation and continues through ongoing professional development for practicing teachers and administrators.

Guiding Principle 4

Evidence-based decision-making must be at the heart of all instructional decisions related to literacy development.

Evidence-based education is defined as “the integration of professional wisdom with the best available empirical evidence on making decisions about how to deliver instruction” (Whitehurst, 2002, slide 3). The federal No Child Left Behind Act (NCLB) of 2001 defines scientifically based research as “research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs” (NCLB, 2002, p. 1964). In addition to being scientifically based, such practices and events must be coupled with professional wisdom that ensures what has been established through rigorous research can be adapted to local contexts and circumstances.

In order to accomplish this task, teachers must use various sources of data—summative, formative, benchmark, and diagnostic—to obtain a comprehensive and personalized view of the literacy needs of the students they serve. After a thorough analysis of the data, professional wisdom must be used to match individual student needs as closely as possible to evidence-based literacy practices ([International Reading Association, 2002](#)). These practices should be those that have undergone scientifically based study and have been determined to be successful in improving literacy acquisition. Once appropriate practices have been identified and employed, teachers must continue to gather relevant and specific assessment data that reflect the ongoing effectiveness of the practices. In doing so, teachers must answer crucial questions: How do I know if it's working? If so, what's next? If not, how can I remedy it? Continual monitoring and adjusting are essential to this process. In essence, this recursive process must include three essential elements: (a) collecting and analyzing assessment data to determine students' level of functioning and need; (b) matching student needs to evidence-based practices; and (c) monitoring progress and continually adjusting the match between need and research-based practices.

The success of this process requires several important considerations. First and foremost, those responsible for planning and delivering instruction must not only have access to relevant data regarding their students, but they also must be “data literate.” While schools today are often data-rich, responsible use of data requires guidance and instruction on the value, analysis, and interpretation of information gleaned from data. Therefore, carefully designed learning is essential, beginning with those in teacher preparation programs. It is in these programs that teachers must be prepared to think like scientists and begin to be reflective about their actions and observations. Therefore, specialized and contextually relevant professional development about the interpretation and use of data must be provided for practicing teachers and administrators.

According to Stanovich and Stanovich (2003), “scientific thinking in practice is what characterizes reflective teachers – those who inquire into their own practice and who examine their own classrooms to find out what works best for them and their students” (p.4).

Equally important to knowing how to interpret student assessment data is the understanding of what it means to employ “evidence-based practices” and where to find information on practices that have stood the test of rigorous research. According to Stanovich and Stanovich (2003):

One factor that has impeded teachers from being active and effective consumers of educational science has been a lack of orientation and training in how to understand the scientific process and how that process results in the cumulative growth of knowledge that leads to validated educational practice. (p. 5)

According to Shavelson and Towne (2002), a study is scientific when:

1. Pose significant questions that can be investigated empirically.
2. Link research to relevant theory.
3. Use methods that permit direct investigation of the question.
4. Provide a coherent and explicit chain of reasoning.
5. Replicate and generalize across studies
6. Disclose research to encourage professional scrutiny and critique. (p. 52)

Again, those in teacher preparation programs as well as practicing teachers must be provided with experiences that enable them to develop an awareness and understanding of those practices that have been judged to be scientifically based. Since NCLB required the implementation of “scientifically-based” practices in the early 2000s, there has been an increasing body of research pointing to such practices. The following are among the many resources that educators may use to obtain research-based information:

- International Reading Association
<http://www.reading.org/>
- National Reading Panel
www.nationalreadingpanel.org/
- The Literacy Research Initiative (LRI)
<http://lincs.ed.gov/research/research.html>
- The Promising Practices Network
<http://www.promisingpractices.net>
- Doing What Works
<http://dww.ed.gov/site/>
- National Center for Education Research (NCER)
<http://ies.ed.gov/ncer/>
- The What Works Clearinghouse
<http://www.w-w-c.org/>
- Institute of Education Sciences
<http://ies.ed.gov/aboutus/>
- Briefs for families on evidence-based practices
<http://cecp.air.org/familybriefs/>
- IDEAS that work: Research in special education
<http://ericec.org/osep-sp.html>

Finally, an obvious but often overlooked requirement for implementing evidence-based instruction is time that is *intentionally* allotted for data analysis, opportunities to explore research-based practices, and sessions for reflection on what is and is not working in classrooms. In order for educators to think like scientists, they must be given the time and preparation in order to do so.

Stanovich and Stanovich (2003) compare effective, evidence-based teaching to the work of architects, which applies many foundational (research-based) principles of engineering to the structure and design of buildings:

Architects wish to design beautiful buildings and environments, but then must also apply many foundational principles of engineering and adhere to structural principles. If they do not, their buildings, however beautiful they may be, will not stand. Similarly, a teacher seeks to design lessons that simulate students and entice them to learn – lessons that are sometimes a beauty to behold. But if the lessons are not based in the science of pedagogy, they, like poorly constructed buildings, will fail. (pp. 3-4)

Evidence-based decision-making doesn't just happen: Ensuring that it is at the core of all literacy instruction requires a commitment of time, staff development, and resources on the part of teachers, administrators, and policymakers.

Guiding Principle 5

Educators must be prepared to teach effectively in the schools of the 21st century and be provided with continuing professional development support that enables them to be lifelong learners.

Quality teaching has been identified as the most significant variable associated with student learning (Darling-Hammond et al., 2009; Hanushek, 1992; Rivkin, Hanushek, & Kain, 2005). Yet, research findings indicate that poorer school districts and minority children get the least qualified, least knowledgeable teachers (Darling-Hammond, 1999). Given the importance of teacher expertise in all schools, it is crucial that new teachers, at all levels from Pre-Kindergarten to Grade 12, be prepared to be successful educators. Likewise, recognizing that new teachers are not finished products, but rather highly qualified novice educators, there must be opportunities in schools to help these beginning educators grow professionally. As such, job-embedded professional development must be an integral part of every school's comprehensive planning. In other words, teachers must have opportunities to self-reflect, work with their colleagues in such

ways that they grow individually, and work together as a means of improving the school as a whole and developing the best education for the students they serve.

Preparing Teachers

Although much has been written about teacher education in general, research about the preparation of teachers for teaching reading has not been a priority of literacy researchers until recently (Anders, Hoffman, & Duffy, 2000; Roller, 2001). Recent work analyzing research specifically on reading teacher education drew the following conclusions: university teaching practices in which teacher education candidates have opportunities to apply what they are learning, see demonstrations of practice, and receive explicit explanations and examples are important (Risko et al. (2008). In other words, those learning to teach must be given opportunities to apply what they are learning to practice in simulated and real classroom situations. As Moats indicated in the title of her 1999 report, teaching reading *IS* rocket science. Moats (1999) identified four essential areas of emphasis: (a) psychology of reading and reading development; (b) knowledge of the structure of the English language; (c) applying best practices in all aspects of reading instruction; and (d) using validated, reliable, and efficient assessments to inform classroom teaching of reading and writing. To put it in the words of Schulman (1986), teachers must have an in-depth knowledge of content (the what of instruction), general pedagogy (general notion of how to teach, e.g., active engagement, etc.), and content pedagogy (knowing how to teach a specific subject or area, in this case, reading). The newly released *Standards for Reading Professionals* (International Reading Association, 2010) identify six standards that apply to not only the teacher of reading, but also to the middle and high school content teacher who has responsibility for helping students “engage in and learn not only the content but also the reading and writing demands of the discipline” (p. 41). These Standards are:

- Standard 1: Candidates understand the theoretical and evidence-based foundations of reading and writing processes and instruction.
- Standard 2: Candidates use instructional approaches, materials, and an integrated comprehensive balanced curriculum to support student learning in reading and writing.
- Standard 3: Candidate use a variety of assessment tools and practices to plan and evaluate effective reading and writing instruction.
- Standard 4: Candidates create and engage their students in literacy practices that develop awareness, understanding respect, and a valuing of differences in our society.
- Standard 5: Candidates create a literate environment that fosters reading and writing by integrating foundational knowledge, instructional practices, approaches and methods, curriculum materials, and the appropriate use of assessments.

- Standard 6: Candidates recognize the importance of, demonstrate, and facilitate professional learning and leadership as a career-long effort and responsibility. (IRA, pp. 7-15)

Where Pennsylvania Stands: Recognizing the importance of pre-service, education, Pennsylvania has developed new guidelines for institutions preparing teachers. These guidelines require that teacher candidates have additional coursework related to addressing the needs of English Language Learners and those students who might qualify for special education services. The guidelines incorporate the recent research findings about early literacy in the guidelines for Teachers of Young Children. Pennsylvania's General Standards and Specific Program Guidelines for State Approval of Professional Educator Programs can be viewed at:

http://www.portal.state.pa.us/portal/server.pt/community/institutional_program_approval/8817

Professional Development of Teachers

The novice teacher arriving at the schoolhouse door is not a finished product. According to Snow, Griffin, and Burns (2005), learning to teach is a developmental process, with teacher development a progression through the stages of pre-service, apprentice, novice, experienced, and master teacher. Teachers at each of these stages must be engaged in learning, assessing, and reflecting about their work. Professional learning, then, is the cornerstone for strengthening the capacity of educators and building interdisciplinary learning communities to deliver higher literacy standards for every child. The path to sustainable literacy outcomes for all students rests on an investment in quality and shared professional learning toward the goal of becoming “practice-centered” (DuFour, DuFour, & Eaker, 1998). Professional learning, as opposed to just teaching, must become a school’s top priority, as schools redefine themselves as communities, professional work places, learning organizations, and democratic communities (Institute for Educational Leadership, 2001; Conley, 1997).

Leadership, infrastructure, resources, and the ability of professionals to access outside training and technical assistance are essential characteristics of effective professional learning (Jaquith, Mindich, Chung Wei, & Darling-Hammond, 2010). These findings are supported by the work of the National Implementation Research Network (NIRN) where “professional learning” was identified as having a significant impact on implementation/school improvement outcomes (Fixsen, Naoom, Blase, Freedman, & Wallace, 2010). Hiring and supporting educational practitioners who demonstrate qualities such as “highly responsive to training and feedback” and “practice-centered” has become an essential practice (Fixsen et al., 2010). Building the instructional skills of educators has consistently been identified as one of the six most commonly

employed interventions among the world's most improved school systems (Mourshed, Chijioke, & Barber, 2010). In schools with well-developed professional development plans, high quality leadership is evident. These leaders provide teachers with opportunities to collaborate with their peers, reflect on their teaching, and participate in decision-making about creating and meeting student goals. In these schools, the importance of human and social capital is understood (Leana & Pil, 2006). In other words, individual teachers, their expertise and experience are valued. Further, there is a culture that provides teachers with the opportunity to work with and learn from their peers. In these schools, distributed leadership is actualized. They are schools where distributed leadership is actualized (Spillane, Halverson, & Diamond, 2001).

Where Pennsylvania Stands: Pennsylvania has a system of robust supports that can be used by schools to guide systems change and transform teaching and learning in order to enhance student growth and achievement. With the adoption of its Standards Aligned System (the what) and Response to Instruction and Intervention Framework (the how), Pennsylvania is nicely poised to scale research-based literacy instructional, curriculum and assessment practices to new and improved levels. However, we continue to need intensive effective and ongoing professional learning opportunities for teachers to enable them to understand how to use these systems as a means of enhancing assessment and instructional efforts. The ultimate goal is to provide the focused, intensive, and ongoing professional development that will result in improved literacy outcomes for all students, regardless of race, class, or disability status.

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Part III: Essential Elements

In this section, we describe the six essential elements, providing a rationale for each of them and then suggesting implications for practice.

The Six Essential Elements

1	Literacy programs (Birth-12) require a well-articulated, coherent set of goals based on standards as identified by Pennsylvania Department of Education. Articulation is needed between all levels, but especially at important transition points, (i.e., pre-school to kindergarten; elementary school to middle school; and middle school to secondary school). Such programs also require an understanding that each of the language arts contributes to the learning of the other disciplines.
2	Oral language is the foundation for literacy development. Speaking and listening are the tools of communication that become the basis for the written word.
3	Effective assessment is a key component of quality teaching and learning and is important for literacy instruction and student learning. Teachers, schools, districts, and the state need the knowledge and understanding of how to use data-driven decision-making to inform instructional practices and improve student learning.
4	Fostering engagement and academic resiliency are keys to developing literate students.
5	Differentiation of instruction is key to enhancing students' ability to learn. Teachers must be able to plan instruction that accounts for the differences that exist in students' skills, interests, cultures, and experiential backgrounds.
6	The development of a literate individual requires that educators in all of the academic disciplines incorporate literacy instruction as a means of enhancing students' ability to learn the content of the discipline.

ESSENTIAL ELEMENT 1: Standards

Literacy programs (Birth-12) require a well-articulated, coherent set of goals based on standards as identified by Pennsylvania Department of Education. Articulation is needed between all levels, but especially at important transition points, (i.e., pre-school to kindergarten; elementary school to middle school; and middle school to secondary school). Such programs also require an understanding that each of the language arts contributes to the learning of the other disciplines.

RATIONALE

Importance of Standards to guide curriculum and instruction. Research evidence has contributed to a deeper understanding of how to improve student learning and overall literacy achievement in schools (Good & Brophy, 1986; Levine & Lezotte, 1990, Scheerens & Bosker, 1997, Marzano, 2000). Although there are many factors that contribute to student learning (e.g., monitoring student work, parental involvement, and school climate), one of the factors highlighted in these various research reports is the importance of a “guaranteed and viable curriculum” (Marzano, 2003, p. 22). Essential goals and content for all students should be identified; moreover, these goals should enable all students to gain the necessary skills of “a literate person in the twenty-first century” (Common Core State Standards Initiative [CCSS], 2010, p. 3). Standards provide schools with necessary information for identifying what students need to know and be able to do at each grade level. These end-of-year expectations provide school districts with a defined cumulative progression of literacy skills. In addition, the Common Core State Standards (CCSS) adopted by

In a complex and sometimes even dangerous world, their ability to read will be crucial. Continual instruction beyond the early grades is needed.”
— International Reading Association
(Moore et al., 1999, p. 3)

Pennsylvania Department of Education (PDE) provide another resource for identifying increasingly challenging content relevant for developing the literacy curriculum. These standards provide key information about the importance of using complex materials in the classroom, especially informational texts in both English language arts classrooms and in the academic disciplines.

Alignment and articulation. At the same time, individual schools must take into consideration their local context—including teacher knowledge, student needs, district curriculum, and resources—to make decisions about how to meet or address the standards. By reviewing standards and discussing how they can be used to develop both curriculum and instructional practices, districts can develop a plan for literacy that is coherent and articulated across the grades. Too often, teachers in schools make independent decisions about what and to what extent material should be covered. As indicated by Stevenson and Stigler (1992), such

inconsistent practices create a learning gap for students. Some topics or skills are addressed by individual teachers and omitted by others; some teachers have different expectations about what students should learn; or student assignments in various classrooms differ in their level of challenge or difficulty. In these cases, it is difficult to know what content students have had an opportunity to learn as they move through the grades. By using a well-articulated set of goals, schools can create equal opportunities for access to a challenging literacy curriculum for all students.

An integrated model. According to the CCSS (2010), the processes of communication are closely connected; thus, teachers can more effectively and efficiently develop reading, writing, speaking, and listening skills by taking advantage of these connections. Students can write about what they read; they can also discuss (speak and listen) with others their responses to various selections. At early levels, students can read what they have written and use these experiences for developing a sense of the alphabetic principle and the importance of reading as a meaning-making endeavor.

In the following charts, the foci of instruction for Birth-5, Kindergarten-grade 5, and Grades 6-12 for Reading, Writing, Listening, Speaking, and Language are identified in summary form. In the implications sections, resources are identified, including specific standards documents adopted by PDE. Additional ideas for instructional practice are also described.

Reading: Focus of Instruction

Birth to Age 5	Grades K-5	Grades 6-12
<p>Early development of essential competencies enhances and enriches the development of “conventional literacy skills” in the years before formal schooling begins.</p> <p>Many experiences with oral language, engagement in listening and speaking, development of print concepts, and book awareness provide the consistent repetitions of early concepts needed to become a reader.</p> <p>Phonological awareness is an important building block that leads to successful reading.</p> <p>Experiences that build world and word (vocabulary) knowledge of preschoolers serve as a fundamental building block.</p> <p>Beginning readers use a variety of information to acquire meaning from text.</p> <p>Learners benefit from opportunities with pictures, symbols, letter/sound correspondence (phonics), and familiar words.</p>	<p>The learning focus for K-5 students begins with the development of the foundational skills (See CCSS, 2010, Foundational Skills (K-5):</p> <ul style="list-style-type: none"> • print concepts • phonological awareness • phonics and word recognition • fluency <p>At the same time, there must be an emphasis on the development of vocabulary and comprehension so that students see reading as a meaning-making process. “The foundational skills are not an end in and of themselves; rather, they are necessary and important components of an effective, comprehensive reading program designed to develop proficient readers with the capacity to comprehend texts across a range of types and disciplines.” (CCSS, 2010, p. 15)</p> <p>As beginning readers increase their knowledge of word-solving strategies, they develop strategies to link prior knowledge to new information in books, leading to the ability to comprehend, evaluate and appreciate text.</p>	<p>“The skills that students learn up until fourth grade are absolutely critical to later success, but they are simply not enough. Adolescent literacy is a shifting landscape where the heights get higher, the inclines steeper and the terrain rockier...” (Carnegie Counsel on Advancing Adolescent Literacy [CCAAL], 2010, p. 10)</p> <p><i>Time to Act</i> (CCAAL, 2010) describes the changes students encounter as they transition to secondary grades:</p> <ul style="list-style-type: none"> • <i>Texts become longer</i> – Students need to develop reading stamina. • <i>Word complexity increases</i> – Students need to develop technical and all-purpose academic vocabularies, with increasing demands on word recognition, pronunciation, fluency, and meaning-making. • <i>Sentence complexity increases</i> – Students need to understand complex relationships among ideas signaled through connective words set in long and complicated sentences. • <i>Structural complexity increases</i> – Students need to recognize and use text structure to identify several logical relationships between ideas.

	<p>“To build a foundation for college and career readiness, students must read widely and deeply from among a broad range of high-quality, increasingly challenging literary and information texts” (CCSS, 2010, p. 10).</p> <p>Literacy demands change and intensify quickly after third grade. Upper elementary students are expected to learn new words, new facts, and new ideas from reading, as well as to interpret and summarize the texts they read. Combining literacy skills and content knowledge requires a new level of sophistication.</p> <p>Learning gradually shifts to deeper comprehension in the intermediate grades supplemented with instruction in word study and fluency as needed.</p> <p>Instruction should be differentiated: Good readers will need less practice with these concepts than struggling readers will.</p> <p>The point is to teach students what they need to learn and not what they already know—to discern when particular children or activities warrant more or less attention.</p>	<ul style="list-style-type: none"> • <i>Graphic representations become more important</i> – Students must synthesize information from graphs, charts, tables, illustrations, and equations, with written text to grasp the full meaning of content-area texts. • <i>Conceptual challenge increases</i> – Students must synthesize from one task to another and from one set of concepts to another, and build logical relationships across multiple aspects of a given conceptual domain with the information they glean from texts. <p>The overarching goal is stated clearly in the final Reading Anchor Standard: “Read and comprehend complex literary and informational texts independently and proficiently” (CCSS, 2010, p. 10).</p> <p>Reading at the middle and high school level is characterized by increasing text complexity and focus on informational text.</p> <p>Interacting with text through close reading, analysis, and interpretation is essential.</p> <p>A deep reading of text should engage the reader in interacting with the text to discern not only the craft of the writer but the connectivity to other texts and the ability to cite evidence to support a conclusion.</p>
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IMPLICATIONS FOR READING

Birth to Age 5

The [Infant-Toddler](#) and [Pre-Kindergarten](#) Learning Standards for Early Childhood provide parents and educators with the guidelines for content that can be taught prior to the kindergarten year.

Important implications for instruction include:

- Very young children benefit from a great deal of teacher support in the form of modeled instruction. In reading, this includes the Read Aloud, where teachers or parents read a story to the child, thinking aloud to model their thought processes.
- Reading to young children exposes learners to various skills and strategies that must be developed for successful reading.
- Re-reading familiar books allows young learners to participate in the reading. This can help to develop a positive disposition toward reading and literacy, as well as provide guided practice as children build a repertoire of literacy skills and strategies.
- Emergent learners need to have access to a variety of books. Independent ‘pretend reading’ leads to practice with text reading. This can also enhance oral language and vocabulary development.

Grades K-5

The [Pennsylvania Academic Standards](#) and the [Common Core State Standards for English Language Arts](#) provide the content that needs to be addressed at each grade level. These standards are the expectations we should have for all students. Excellent literacy instruction in the primary grades is essential for preventing future reading difficulties.

Important implications for instruction include:

- Teach the foundational skills (print concepts, phonological awareness, phonics, fluency) explicitly and provide opportunities for students to apply what they are learning. Appendix A (CCSS, 2010) contains supplementary information that provides significant and detailed information to support the teaching of phoneme-grapheme correspondences, the progression of phonological awareness, and orthography.
- Coordinate and integrate the teaching of word-identification skills and comprehension skills/strategies.

- Provide explicit instruction that enables students to apply problem-solving, monitoring, and self-correcting strategies when they are reading. Such strategies may include: re-reading, previewing a text, asking questions, reading aloud, using story structure, using text aids, marking texts, using context, writing in response to reading, discussing text with others (Dorn & Soffos, 2005, p. 42)
- Provide opportunities for students to read and discuss a variety of interesting and appropriate texts from multiple genres.
- Recognized that reading, writing, speaking, and listening are closely intertwined. Thus, classroom practices should be planned so they emphasize these connections (e.g., writing in response to reading).
- There are evidence-based practices that support students in the classroom and enable educators to effectively implement standards-based instruction. See the [Pennsylvania Response to Instruction and Intervention Initiative](#).
- Refer to the Institute of Education Sciences' (IES) *Improving Reading Comprehension in Kindergarten through 3rd Grade: A Practice Guide* (Shanahan et al., 2010). Five specific recommendations include:
 - Teach students how to use reading comprehension strategies.
 - Teach students to identify and use the text's organizational structure.
 - Guide students through focused, high-quality discussion on the meaning of text.
 - Select texts purposefully to support comprehension development.
 - Establish an engaging and motivating context in which to teach reading comprehension

Grades 6-12

The [Pennsylvania Academic Standards](#) and the [Common Core State Standards for English Language Arts](#) provide the content that needs to be addressed at each grade level. These standards are the expectations we should have for all students.

Important implications for instruction include:

- Expose students to a variety of texts for a variety of purposes, providing explicit explanations and guidance as needed so that learners can comprehend texts across the content areas.
- Teach specific strategies for navigating informational text across content areas.
- Increase text complexity to develop strategic readers with strong analytical skills.

- Provide instruction in the analysis and evaluation of a variety of texts to determine theme, style, likenesses, etc.
- Provide opportunities for students to examine text from a literary perspective to understand the craft of the writer.
- Refer to the IES's publication entitled [*Improving Adolescent Literacy: Effective Classroom and Intervention Practices: A Practice Guide*](#) (Kamil, Borman, Dole, Kral, Salinger, & Torgeson, 2008). This guide recommends that educators:
 - Provide explicit vocabulary instruction.
 - Provide direct and explicit comprehension strategy instruction.
 - Provide opportunities for extended discussion of text meaning and interpretation.
 - Increase student motivation and engagement in literacy learning.
 - Make available intensive individualized interventions for struggling readers that can be provided by qualified specialists.

Writing: Focus of Instruction

Birth to Age 5	Grades K-5	Grades 6-12
<p>Beginning writers need encouragement and instruction in composing stories and text using pictures, scribbles, letter-like forms, and letters.</p> <p>Emergent writers may also write familiar words and label pictures.</p> <p>As children develop understanding of letter-sound correspondence, they may attempt to phonetically spell words.</p> <p>Preschoolers need opportunities to develop their ability to communicate in writing through a variety of genres and styles.</p>	<p>Kindergarten students begin with pre-writing, and by the end of fifth grade, students are expected to experience writing narrative, persuasive, and informational text. The Common Core State Standards: Writing K-5 (2010) identify the following 4 categories:</p> <ol style="list-style-type: none"> 1. Text types and purposes 2. Production and distribution of writing 3. Research to build and present knowledge 4. Range of writing <p>Provide students with explicit instruction and opportunities to devote significant time and effort to writing, producing numerous pieces over short and extended periods throughout the year.</p> <p>The primary goal of instruction is to develop students' ability to use writing as a way of offering and supporting opinions, demonstrating understanding of the subjects they are studying, and conveying real and imagined experiences and events.</p> <p>Students need support in learning to appreciate that a key purpose of writing is to communicate clearly to an external,</p>	<p>Good writing skills are essential for effective communication.</p> <p>As stated in Graham and Perin (2007), "writing skill is a predictor of academic success and a basic requirement for participation in civic life and in the global economy" (p. 3).</p> <p>Students should have opportunities to write in persuasive, informative, and narrative modes, with guidance as needed.</p> <p>Students should write routinely over extended periods (time for research, reflection, and revision) and shorter periods (a single sitting or a day or two) for a range of tasks, purposes, and audiences.</p> <p>Effective writers employ detail in their writing, sustain a focus, and produce well-organized writing suited to purpose. They are able to gather information, evaluate sources, and cite evidence.</p> <p>Writing should be used as a tool for learning, not just showing what was learned, in all disciplines.</p> <p>Writers need to be strategic in creating the writing appropriate to task, whether</p>

	<p>sometimes unfamiliar, audience and adapting the form and content of their writing to accomplish a particular task and purpose.</p> <p>Students need support to build knowledge on a subject through research projects and to respond analytically to literary and informational sources.</p>	<p>on-demand writing or drafting and redrafting over time.</p> <p>Technology is one of the tools to employ to support the writing process.</p>
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IMPLICATIONS FOR WRITING

Birth to Age 5

The [Infant-Toddler](#) and [Pre-Kindergarten](#) Learning Standards for Early Childhood provide parents and educators with the guidelines for content that can be taught prior to the kindergarten year.

Important implications for instruction include:

- Modeling the act of writing for young children will foster an emerging understanding of what writers do. When adults write messages for children, learners begin to see that writing is ‘talk written down,’ — that our messages can be recorded and read back later.
- Oral language is the building block to writing: When children understand they can write what they say, they have endless opportunities for composition. When adults guide students in their writing approximations, children can gain new understandings about composition, concepts about print, and phonics.
- Spelling approximations provide young learners with essential learning opportunities. When children write letters to represent sounds, they are practicing and building phonics skills. This practice ultimately leads to increased fluency in writing, as it can lead to conventional spelling of high frequency words (Bear, Invernizzi, & Templeton 2007). Young children often develop this ability spontaneously; however, modeled instruction and guided practice enhance this, and all other, learning.
- Provide preschoolers with daily opportunities to explore writing materials and conventions in a purposeful and meaningful manner.

Grades K-5

The [Pennsylvania State Standards](#) and the [Common Core State Standards for English Language Arts](#), provide the content that needs to be addressed at each grade level. These standards are the expectations we should have for all students.

Important implications for instruction include:

- Provide students with systematic and explicit instruction in quality of writing as appropriate per the individual student’s instructional level.
- Allot time daily for students to write with guidance for a variety of purposes (e.g., quick writes, reader response, summarization, etc.).

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- Model writing of narrative, informational, and persuasive/argument writing during course of the school year.
- Focus on the writing process as a means of producing and improving writing.
- Provide opportunities for research and the creation of short and long research projects, employing technology where appropriate.

Grades 6-12

The [Pennsylvania State Standards](#) and the [Common Core State Standards for English Language Arts](#) provide the content that needs to be addressed at each grade level. These standards are the expectations we should have for all students.

Important implications for instruction include:

- Provide opportunities for students to write daily for a variety of purposes.
- Develop student writers through modeling and explicit instruction in narrative, informational, and persuasive writing.
- Focus on the writing process as a means of producing and improving writing.
- Provide opportunities for research and the creation of short and long research projects, employing technology where appropriate.

Speaking and Listening: Focus of Instruction

Birth to Age 5	Grades K-5	Grades 6-12
<p>Young children express themselves and their knowledge of the world through spoken language.</p> <p>The overarching goal is to ensure that learners are capable of speaking and listening so that they are capable of sharing ideas and understand those of others.</p> <p>The primary goals for listening and speaking include teaching preschoolers how to converse about a topic, to convey understanding, and to ask questions in an effort to clarify meaning.</p> <p>Students need many opportunities to talk with others, such as their parents, caretakers, teachers, and peers.</p> <p>Early learners need support and scaffolding from adults to help them elaborate and expand on what they have said.</p> <p>Young children need experiences and guidance in how to listen to others.</p>	<p>Speaking and listening are important prerequisites for learning to read and write; furthermore, they have intrinsic value as modes of communication.</p> <p>Students must have opportunities to take part in a variety of rich structured conversations with small groups, an individual partner, or the whole class.</p> <p>Students must be able to “contribute accurate, relevant information, respond to and develop what others have said, make comparisons and contrasts, and analyze and synthesize a multiple of ideas in various domains” (CCSS, 2010, p. 22).</p>	<p>Speaking and Listening focus on two areas: (a) Comprehension and Collaboration and (b) Presentation of Knowledge and Ideas.</p> <p>Students need to become good speakers and listeners whether engaged in one-on-one, small group, or whole class interactions.</p> <p>Listening attentively, responding thoughtfully, and building upon the ideas of others creates effective communicators.</p> <p>Specific ideas from The CCSS (2010, pp. 49-50):</p> <ul style="list-style-type: none"> -Students need the opportunity to participate effectively in a range of conversations and collaborations with diverse partners, building on others’ ideas and expressing their own clearly and persuasively. -Students must have many opportunities to participate in a variety of rich, structured conversations as part of a whole class, in small groups, and with a partner.

IMPLICATIONS FOR SPEAKING AND LISTENING

Birth to Age 5

Educators and parents of children from birth to age 5 can gather essential information from Pennsylvania's [Infant-Toddler](#) and [Pre-Kindergarten](#) learning standards to plan instruction. See the Essential Element of Oral Language in this document for additional information.

Important implications for instruction include:

- Children learn to speak by listening to and interacting with more knowledgeable others. Through conversations, teachers can model good speaking and listening skills. When children participate in oral language activities, they learn to apply the good speaking and listening skills that have been modeled.
- Teaching must be responsive and intentional. Teachers and childcare providers need to plan opportunities to model effective conversational conventions, such as turn-taking, asking questions, and providing complete responses.
- Authentic oral language activities, such as “Show and Tell” or “Buzz Groups,” provide students with opportunities to share their own experiences. They become more successful when opportunities for guided practice are provided.

Grades K-5

The [Pennsylvania State Standards](#) and the [Common Core State Standards for English Language Arts](#) provide the content that needs to be addressed at each grade level. These standards are the expectations we should have for all students.

Important implications for instruction include:

- Instruct students on the importance of collaborating, being a good listener, supporting ideas with facts (depending on grade level), and using media in effective communication.
- Model effective turn-taking, collaboration, and listening skills. Provide guided practice in listening and speaking skills as well as feedback to students.
- Provide opportunities for students to engage in one-on-one, small group, and whole class conversations. This task can be accomplished through whole class discussion or center time activities.

Grades 6-12

The [Pennsylvania State Standards](#) and the [Common Core State Standards for English Language Arts](#) provide the content that needs to be addressed at each grade level. These standards are the expectations we should have for all students.

Important implications for instruction include:

- Provide instruction on the importance of collaborating, being a good listener, supporting ideas with facts, and using media in effective communication.
- Model effective turn-taking, collaboration, and listening skills.
- Provide guided practice in listening and speaking that allows the teacher to provide feedback to students. This exercise ultimately leads to self-regulated learning.
- Provide opportunities for students to engage in one-on-one, small group, and whole class conversations throughout the school day.

Language: Focus of Instruction

Birth to Age 5	Grades K-5	Grades 6-12
<p>A primary goal for young learners (birth through age 5) is to expose children to good models of effective language use. This exposure will help children to develop understanding prior to receiving explicit language instruction in kindergarten and beyond.</p> <p>Young learners need to understand that language is a tool for communication.</p> <p>The development of vocabulary is a key goal for the development of literacy and language in young children.</p> <p>Young children need many experiences and opportunities to use spoken language and gestures to convey a message.</p> <p>Emergent learners begin to approximate writing as a means of sharing their ideas, and ‘pretend read’ in an effort to gain meaning from written text.</p>	<p>The language strand is comprised of three focus areas:</p> <ul style="list-style-type: none"> • Conventions of Standard English • Knowledge of Language • Vocabulary Acquisition and Use <p>Students must gain control over many conventions of standard English grammar, usage, and mechanics as well as learn other ways to use language to convey meaning effectively.</p> <p>They must also be able to determine or clarify the meaning of grade-appropriate words encountered through listening, reading, and media use; come to appreciate that words have non-literal meanings, shadings of meaning, and relationships to other words; and expand their vocabulary in the course of studying content.</p>	<p>The language strand is comprised of three focus areas:</p> <ul style="list-style-type: none"> • Conventions of Standard English • Knowledge of Language • Vocabulary Acquisition and Use <p>The conventions of standard English include grammar, usage, and mechanics as well as the ability to use language to convey meaning effectively.</p> <p>Understanding how language functions in different contexts, making effective choices for meaning, and comprehending more completely when reading or listening are all key concepts for the knowledge of language.</p> <p>The area of vocabulary acquisition includes determining or clarifying the meaning of words through context clues, understanding word relationships and nuances in meanings, and acquiring and using content specific words.</p>

IMPLICATIONS FOR LANGUAGE

Birth to Age 5

The [Pennsylvania State Standards](#) and the [Early Learning Standards](#) provide the content that needs to be addressed at each age level. These standards are the expectations we should have for all students.

Important implications for instruction include:

- Children need ample opportunities to play with language as they acquire literacy skills. They should be immersed in oral language opportunities, including authentic conversations and planned sharing experiences.
- Adults should demonstrate accurate conventions in speaking, acting as a model of standard language use.
- Children should also have opportunities to see their spoken language, and the speech of others, written down. This experience will facilitate the acquisition and development of early reading and writing skills. For example, teachers can write dictated messages for students in a group or individual setting.
- Students should be immersed in books and other texts (including their own writing) so that they can practice reading the messages written by them and others. Teachers and/or parents should read a variety of books to young children and provide books for independent browsing and exploration.

Grades K-5

The [Pennsylvania State Standards](#) and the [Common Core State Standards for English Language Arts](#) provide the content that needs to be addressed at each grade level. These standards are the expectations we should have for all students.

Important implications for instruction include:

- Focus on the use of language as a tool for communication - as a means for writers to express themselves with style and clarity, as a means for speakers to express ideas clearly, and as a means for readers to understand the author's explicit and implicit message.
- Recognize that reading, writing, speaking, listening and language are closely intertwined. As a result of this relationship, many of the classroom implications are

connected. There are some research-based, evidence-based practices that support students in the classroom. See [Pennsylvania Response to Instruction and Intervention Initiative](#) (RtII) for classroom instructional strategies.

- Support the language development of English Language Learners (ELLs). See [Best Practice for ELLs: Vocabulary Instruction](#) and [Pennsylvania English Language Proficiency Standards](#).

Grades 6-12

The [Pennsylvania State Standards](#) and the [Common Core State Standards for English Language Arts](#) provide the content that needs to be addressed at each grade level. These standards are the expectations we should have for all students.

Important implications for instruction include:

- Focus on the use of language as a tool for communication – as a means for writers to express themselves with style and clarity, as a means for speakers to express ideas clearly, and as a means for readers to understand the author’s explicit and implicit message.
- Refer to the [Common Core State Standards for English Language Arts](#) for further information.

The extensive research base on vocabulary learning and teaching provides us with important guidelines that inform instruction (Harmon & Wood, 2008). This research summary highlights relevant studies that support several key understandings of vocabulary learning and teaching. Harmon and Wood (2008) describe the following are six key understandings for all teachers across age levels and content areas:

- Word knowledge is important for learning.
- Word knowledge is complex.
- Metacognition is an important aspect of vocabulary learning.
- Effective vocabulary instruction moves beyond the definitional level of word meanings.
- Vocabulary learning occurs implicitly in classrooms across disciplines.
- Vocabulary learning occurs through direct instruction.

Links to Resources for Reading, Writing, Speaking, Listening and Language

Birth to 5

[The EFL Playhouse](#)

- Resources for young English Language Learners

[KidSource](#)

[Literacy Achievement Research Center at Michigan State University](#)

[School-Home Links Reading Kit](#)

- U.S. Government ideas for kindergarten

[TeAchnology](#)

- Resources for Early Childhood Language Arts

[Webbing into Literacy: A Head Start Program](#)

Grade K-5

[Florida Center for Reading Research \(FCRR\)](#)

[Improving Reading Comprehension in Kindergarten Through 3rd Grade](#)

- Guide from the Institute of Education Sciences' What Works Clearinghouse that recommends five steps to helping educators improve early reading comprehension instruction for young readers.

[International Reading Association](#)

[IRIS Center for Training Enhancements](#)

- Free online interactive resources that translate research about the education of students with disabilities into practice. Materials cover a wide variety of evidence-based topics, including behavior, RTI, learning strategies, and progress monitoring.

[Literacy Achievement Research Center at Michigan State University](#)

[Pennsylvania Training and Technical Assistance Network](#)

[Teaching is Rocket Science: What Expert Teachers of Reading Should Know and Be Able To Do](#)

Grades 6-12

[Adolescent Literacy: Position Statement of the International Reading Association](#)

[College and Career Readiness Anchor Standards for Speaking and Listening](#)

[Literacy Achievement Research Center at Michigan State University](#)

[National High School Center: Topics for High School Improvement](#)

[Secondary Section of the National Council of Teachers of English](#)

[Thinkfinity](#)

Notable Features of the Common Core State Standards (CCSS)

Because the CCSS (2010) provide some unique features beyond those provided in the Pennsylvania Academic Standards, each is described below.

CCSS Approach to Text Complexity

Success in the workforce or in post-secondary education requires being able to independently read a high volume of complex texts. Various indicators show that many high school graduates are not prepared to do this task because they have not had experience with texts of the same complexity as they will encounter in colleges, technical schools, and the workplace. They have also not worked with the same volume of expository texts, as opposed to narrative texts, that they will encounter in post-secondary schools or the workplace. A study of ACT results showed that student success in college was not more closely linked to student ability to answer higher-order questions such as inferences, but was instead linked to the ability to read high complexity text. The CCSS are designed to ensure that students have sufficient exposure to high complexity texts across text genres and content areas (CCSS, 2010).

The CCSS (2010) use a three-part model to measure text complexity:

1. **Qualitative evaluation** of text is based on aspects of text best measured by human readers, text purpose, structure, language use, and knowledge demands.
2. **Quantitative evaluation** of text addresses text readability as measured by word length, word frequency, sentence length, and text cohesion. These factors are more effectively measured text formulas run by computer.

- 3. Reader and task considerations** refer to variables specific to a reader such as motivation, prior knowledge, and prior experience. These factors are best measured by educators who know both the text and the student (CCSS, 2010).

Appendix A of the CCSS (2010) contains samples of annotated texts. These examples include a sample of the text, the assigned grade level, text complexity band, an explanation based on the texts' qualitative and quantitative evaluations, and a discussion of reader and task considerations. These examples show how the three-part text complexity model works in application to specific texts (CCSS, 2010).

Exemplars of Reading Texts

One of the most notable features of the CCSS (2010) is the provision of exemplar texts. The CCSS include specific examples of texts that students should be able to master in specific grade bands. There is not an expectation that teachers use all or only the exemplar texts, but the exemplar texts provide clear examples of the nature and complexity what is expected of students in the different grade bands. Appendix B of the CCSS contains these exemplar texts, and it also includes sample performance tasks by grade band and genre. Appendix B includes the following types of exemplar texts:

	Grade Bands: K-1 and 2-3	Grade Band: 4-5	Grade Bands: 6-8 and 9-10 and 11-CCR
Exemplars included in the CCSS	<ul style="list-style-type: none"> • Stories • Poetry • Read-Aloud Stories • Read-Aloud Poetry • Informational Texts • Read-Aloud Informational Texts 	<ul style="list-style-type: none"> • Stories • Poetry • Informational Texts 	<ul style="list-style-type: none"> • Stories • Drama • Poetry • Informational: English Language Arts • Informational: History/Social Studies • Informational: Science, Math, and Technical Subjects

Reading Standards: Foundational Skills

Included with the CCSS (2010) Reading Standards for K-5 are foundational skills for K-5 students that focus on key aspects of learning to read. The foundational skills focus on print concepts, phonological awareness, phonics and word recognition, and fluency (CCSS, 2010).

Appendix A also contains supplementary information that provides significant and detailed information to support the teaching of phoneme-grapheme correspondences, the progression of phonological awareness, and orthography (CCSS, 2010).

CCSS – Writing

The CCSS (2010) focus on three types of writing: argument, informational/explanatory, and narrative. An argument is a reasoned, logical text designed to demonstrate that a writer's proposition is valid. Informational/explanatory text is intended to describe or explain a topic. Its purpose is to clarify, while an argument text is intended to persuade. Narrative text conveys experience and uses time as a structure. Narrative texts can address content areas such as biographies in history/social studies, and accounts of experiments in science.

The CCSS (2010) place special emphasis on the writing of arguments based on substantive topics or issues. The ability to do this well is important for both college and career readiness. The CCSS (2010) point out that an argument is a text designed to make its point through logic and reasons, as opposed to the emotional approaches that might be found in persuasive writing. A number of studies highlight that a student's ability to write a logical, reasoned argument supported by relevant facts is key for academic success. The ability to write an argument is also critical for career success, since the work of many professions is to address issues through research, reflection, and decision-making and then sharing the results of that process with others. Knowing how to write a high quality argument text will also prepare students to evaluate the argument texts created by others, and this is a skill that is vital in the information age (CCSS, 2010).

Samples of Student Writing

Appendix C in the CCSS (2010) contains student writing samples across the grade levels. These samples are annotated to demonstrate the criteria for quality writing at each grade level, and all samples meet the quality expected for the grade level. They are produced in different settings and include in-class work, on-demand assessments, and research projects. These samples are very useful resource for making the CCSS writing standards clear and explicit, and they show what quality writing in the different writing types looks like across the grade levels.

Reading and Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects

Another notable feature of the CCSS (2010) is the creation of reading and writing standards for grades 6-12 that are specific to content areas. With the CCSS's increased emphasis on the reading and writing of content-specific informational texts, these standards provide additional specificity for the kinds of reading and writing that students should learn during content area instruction. These standards are organized into three grade bands: Grades 6-8, Grades 9-10, and Grades 11-12. There are separate reading standards created for history/social studies, and science and technical subjects. The writing standards address all content areas.

Alignment of CCSS Expectations and National Assessment of Educational Progress (NAEP)

The CCSS' (2010) increased emphasis on the reading of informational texts and on the writing of informational texts, especially arguments, is aligned to the NAEP's increased emphasis on informational texts. Note the increasing emphasis on the use of informational texts in the two tables below.

Distribution of Literary and Informational Passages by Grade in the 2009 NAEP Reading Framework (CCSS, 2010, p. 5)		
Grade	Literary	Informational
4	50%	50%
8	45%	55%
12	30%	70%

Distribution of Communicative Purposes by Grade in the 2011 NAEP Writing Framework (CCSS, 2010, p. 5)			
Grade	To Persuade	To Explain	To Convey Experience
4	30%	35%	35%
8	35%	35%	30%
12	40%	40%	20%

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ESSENTIAL ELEMENT 2: Oral Language

Oral language is the foundation for literacy development. Speaking and listening are the tools of communication that become the basis for the written word.

RATIONALE

Infants emerge into a world full of sounds. Their growing brains are hard-wired to be particularly sensitive to the sounds of the language that their caregivers are using. This need is intrinsic and is necessary for infants to negotiate the world and make sense of their experiences (Moats, 2010). By 10 months of age, infants are sensitized to and can distinguish between all the phonemes (speech sounds) in their own language and those in other languages (Gopnick, Meltzoff, & Kuhl, 1999). As babies move from cooing to babbling, they recognize combinations of sounds, and typically between 12 and 18 months, they begin to use words. Between 24-36 months, young children learn how to put words together to make phrases and sentences. By listening and interacting with the adults in their environment, children learn all the components of our rule-ordered language system. From the individual sounds of language, to the meaning of words and word parts, to the various ways words are put together in sentences, as well as the rhythm and intonations of the language—young children integrate all the components of the communication system. It is these very structures that are the basis for written language and form a foundation for literacy development: *It is both from and through speech that children come to understand written language* (Adams, 1990).

Literacy is an achievement that relies on language proficiencies at many levels, from basic sounds to the complexities of text structures and literary devices. Language proficiency and reading achievement are highly correlated (Mehta, Foorman, Branum-Martin, & Taylor, 2005; Goodson, Layzer, Simon, & Dwyer, 2009). Young children’s language skills, including vocabulary and complex language, along with phonological awareness and letter knowledge are the most important and unique predictors of reading ability (Snow, Burns, & Griffin, 1998; Goodson et al., 2009). The more children have experience with language and literacy before they begin formal schooling, the better equipped they are to succeed in reading (Snow et al., 1998). The school experience should enable children to refine and build on the language of their homes and communities.

Children come to school with marked differences in language and vocabulary. They come with language patterns that have been influenced by their culture and family. In their landmark study of young children just learning to talk, Hart and Risley (1995) found that the amount of “talkativeness” in families distinguished students who were “language rich.” When the data were extrapolated, the difference in the number of words heard between an average 4-year-old child from a professional family and an average 4-year-old from a low-income family was 30 million

words (Hart & Risley, 1995). Hart and Risley (1995) found strong correlations between young children living in homes with verbal parents and both higher IQ and better vocabulary scores. In a later study, Hart and Risley (2003) found that vocabulary use at age 3 was predictive of measures of language skills at ages 9-10, as well as with reading comprehension scores in third grade.

Language continues to develop during the primary years. However, the gap between children with advanced language skills and restricted language skills grows wider during the elementary years. In the upper elementary grades, those who enter fourth grade with significant vocabulary deficits show increasing problems with reading comprehension, even if they have good reading (word identification) skills (Beimiller, 2005). As students get older, reading vocabulary measures correlate higher with reading comprehension than do measures of oral vocabulary (Tannenbaum, Torgeson, & Wagner, 2006). These measures take into account both word-reading skills and the knowledge of word meanings.

Although it is essential to understand the development of language for all students, those working with English Language Learners (ELLs) need knowledge that is even more specialized. The ELLs' proficiency in his or her first language has many implications for second language literacy development. Students who are literate and educated in their first language can transfer linguistic knowledge and conceptual knowledge. Students who read in their native language

Factors that Affect Language Transfer

- Alphabet
- Letter Recognition
- Phonetic relationships (e.g., the letter p in Ukrainian sounds like /r/ in English)
- Sounds that are not mutual or don't exist in one of the languages
- Grammar structures, exceptions to typical grammar rules, or grammar patterns that don't exist in one of the languages (e.g., some languages do not have a past tense verb form)
- Language functions that are not mutual
- Cultural functions (e.g., indirect vs. direct communication styles, social hierarchy in language, etc.)
- Idioms or figurative language

already have phonemic awareness and basic literacy skills, and therefore need to be taught only the forms that differ in the second language. They may benefit from the use of translated materials and bilingual dictionaries. Students who are not literate in their native language have a greater challenge, as they must learn to read in a language that they are unable to understand (i.e., ELLs who are not proficient in their native language will have more difficulty learning to read English than will native English speakers). Language transfer impacts ELLs in several ways, with some being advantageous and others, disadvantageous. ELLs may transfer cognates and familiar grammatical structures. Yet, unfamiliar or differing structures may cause errors in word order. In order to understand the impact of the first language(s), it is helpful to consider how similar the first language(s) is in comparison to

English. Consider, for example, the different challenges for native speakers of Spanish, as opposed to Arabic.

Language transfer issues coupled with developing proficiency in English and limited vocabulary may result in the production of student errors, such as encoding and decoding errors, pronunciation errors, omissions in speaking and writing, awkward word order, etc. Students may struggle to retain information and to comprehend it. Some of these errors may mirror those seen in students with learning disabilities; however, they should not be confused as such because they are a normal part of second language development. Such issues can be alleviated through direct instruction in English, the use of graphic and mnemonic supports, and increased exposure and interaction with English (Kauffman, 2007).

IMPLICATIONS

General

Oral language and vocabulary can be developed and enhanced in three main ways: (a) listening to the language and being engaged in conversations, (b) being read to, and (c) reading independently. Parents, caregivers and teachers at all levels should:

- Talk to students. Engage them in conversation.
- Model language patterns.
- Deliberately use rich vocabulary and discuss word meanings.
- Provide time for and encourage conversations between students.
- Read to students and talk about what is being read.
- Encourage wide and independent reading.
- Value and encourage students to use their home language.

Birth to Age 5

The amount of talk in the young child's life is critical for oral language development, intellectual growth, and reading development. As children learn to take turns in the dance of conversation, their language abilities grow even more. Practicing language is as important as hearing it.

- Talk, talk, talk to the infant, the baby, and the young child.
- Get close to the infant/young child so that he or she can see facial expressions, watch lip movements, and hear the voice clearly.

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- Imitate the sounds the baby is making and add new ones.
- Introduce play with sounds and nursery rhymes, finger plays, jingles, and songs.
- Confirm and clarify the child's attempts at using new words.
- Elaborate on what children say and extend their utterances.
- Describe shared experiences with new and rich vocabulary.
- Use varied vocabulary and words that are robust in meaning (e.g., "ferocious" dinosaurs, a group of children make a "commotion"). Children love big words! Mealtimes provide a wonderful opportunity for this type of conversation.
- Discuss the meaning of words.
- In preschools and daycare settings, provide a curriculum that provides rich opportunities for talk between teacher and children.
- Read, read, and read some more to the child. Interact with the child around the text (Whitehurst, 1992).
- Spend some time each day with an individual child, talking with that child about topics of interest. Such time provides opportunities for assessing the child's language and for fostering its growth.
- Foster strong relationships between home, care and education settings.

Kindergarten through Fifth Grade

Oral language and vocabulary develop when teachers and parents:

- Talk to and with students, providing extended opportunity for discussion.
- Provide many opportunities for conversation between students. Use partnering, think/pair/share, small group, and whole class formats in the classroom.
- Foster word consciousness and teach students strategies for learning words on their own.
- Use explicit, robust vocabulary instruction and are intentional about the words chosen (Beck, McKeown, & Kuncan, 2002).
- Create many opportunities for read alouds about a wide range of topics and include all genres.
- Foster discussion among children using open-ended questions about the text.
- Expect wide independent reading. Offer students opportunity to choose their own materials.
- Make available various genres of text, including narrative, informational, poetry, biographies, etc.

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- Teach the importance of collaborating, being a good listener, and supporting ideas with facts.
- Develop a school-wide plan for vocabulary instruction across all domains (White & Kim, 2009).
- See the [Common Core State Standards \(2010\)](#) for additional instructional implications.

Sixth through Twelfth Grade

Literacy demands intensify as secondary students are expected to learn new words, new facts, and new ideas from reading. They must use their literacy skills to learn new content. Teachers in all content areas should:

- Use text-based collaborative learning that involves students interacting with one another around a variety of texts and a variety of topics.
- Include direct vocabulary instruction in language arts as well as content area courses. Teach independent word-learning strategies.
- Take advantage of the social interaction among students as a means of learning through discussions in the classroom.
- Provide opportunities for students to engage in one-to-one, small group, and whole class conversations. Content for the conversations can come from what is important in various domains.
- Teach the importance of collaborating, being a good listener, building on the ideas of others, and articulating ideas clearly, supporting those ideas with facts.
- Use active participation strategies so that all students are engaged in the classroom discourse.
- Use writing as a tool to help students think about and refine word choice, sentence structure, and pragmatics.
- Encourage wide independent reading in a variety of genres.
- See [Common Core State Standards \(2010\)](#) for additional instructional implications.

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Whitehurst, G. J. (1992). *Dialogic Reading: An effective way to read to preschoolers*. Retrieved from <http://www.readingrockets.org/article/400?theme=print>

Additional Annotated Resources

Galinsky, E. (2010). *Mind in the making: The seven essential life skills every child needs*. New York, NY: HarpersCollins.

The chapter on communication (Chapter 3) discusses the course of how children learn to communicate. Children are born primed to communicate. The author explores “parent-speak, parent-look, and parent-gesture” and the positive effect they have on a child’s ability to learn and detect words, learn to communicate, recognize and say words, and process language. The author states that when employers were asked what competencies and skills fall below expectations with new hires, the two top concerns were identified as spoken communication skills and written communication skills, thus pointing out the importance for children to not only acquire tools of language, but to later learn to use the tools with power and precision to communicate effectively.

Learning Point Associates. (2010). *Access to print materials improves children’s reading: A meta-analysis of 108 most relevant studies shows positive impacts*. Washington, D.C.: Author. Retrieved from <http://www.rif.org/assets/documents/RIFandLearningPointMeta-OnePager.pdf>

Learning Point Associates was commissioned by Reading Is Fundamental, to conduct a meta-analytic research synthesis of children’s book ownership and lending programs to determine the effect of access to print materials on educational outcomes for children. An analysis of 44 studies found that access to print materials: improves children’s reading performance, helps children learn the basics of reading, causes children to read longer and produces improved attitudes about reading among children.

Lin, C. (2001). *Early literacy instruction: Research applications in the classroom*. Retrieved from <http://www.readingrockets.org/article/397?theme=print>

The author reviewed various research studies and identified essential elements of effective early literacy classroom instruction. These elements include; phonics and phonemic awareness, positive adult-child relationships, print-rich environment, integrated language explorations in the curriculum, reading and writing activities and varied teaching strategies according to children’s needs. Research shows that there is a link between early literacy and later career and academic success. Teachers, families and communities have a shared responsibility to ensure that children become competent readers and writers.

Lonigan, C. J., & Shanahan, T. (2002). *Developing early literacy: Report of the National Early Literacy Panel* [Executive Summary]. Washington, D. C.: National Institute for Literacy. Retrieved from <http://lincs.ed.gov/publications/pdf/NELPSummary.pdf>

The National Early Literacy Panel (NELP) was convened to look at the implications of instructional practices used with children from birth to age 5. The authors discuss six variables that correlate with later literacy; alphabet knowledge, phonological awareness, rapid automatic naming (RAN) of letters or digits, RAN of objects or colors, writing or writing name and phonological memory. Additional important variables include; concepts about print, print knowledge, reading readiness, oral language and visual processing. Instructional practices that enhance early literacy skills are also discussed and include: code-focused interventions, shared-reading interventions, parent and home programs, preschool and kindergarten programs and language-enhancement interventions.

Additional Resources

Bardige, B. S. (2005). *At a loss for words: How America is failing our children and what we can do about it*. Philadelphia, PA: Temple University Press.

Bardige, B. S., & Segal, M. (2005). *Building literacy with love: A guide for teachers and caregivers from birth-age 5*. Washington, D.C.: Zero to Three Press.

Bennett-Armistead, V. S., Duke, N. K., & Moses, A. M. (2005). *Literacy and the youngest learner*. New York, NY: Scholastic Inc.

Hart, B. & Risley, T. R. (2002). *The social world of children learning to talk*. Baltimore, MD: Paul H. Brookes Publishing Company.

Neuman, S. B., Copple, C., & Bredekamp, S. (2000). *Learning to read & write: Developmentally appropriate practices for young children*. Washington, D.C.: National Association for the Education of Young Children.

Neuman, S. B., & Roskos, K. (2007). *Nurturing Knowledge: Building a Foundation for School Success by Linking Early Literacy to Math, Science, Art and Social Studies*. New York, NY: Scholastic, Inc.

Web Resources

[*Access to Print Materials Improves Children's Reading: A Meta-Analysis of 108 Most Relevant Studies Shows Positive Impacts*](#)

[*Age-Appropriate Speech and Language Milestones*](#)

- This website is from the Lucile Packard Children's Hospital at Stanford. It lists age-appropriate speech and language milestones with associated programs.

[*Center for Early Literacy Learning \(CELL\) Videos*](#)

- These videos are designed for the teacher, parent, trainer, coach, and home visitor. Each video introduces and illustrates a key component of the CELL Early Literacy Learning Model. The home visitor may use a video to introduce and illustrate a component with a parent. The trainer may use a video to introduce, illustrate, or practice a component with teachers. The videos are for use by teachers and with parents as indicated.

[*Developmental Milestones: Understanding Words, Behavior, and Concepts*](#)

- This website lists milestones in understanding words, behavior, and concepts in the language development of children.

[*Early Beginnings: Early Literacy Knowledge and Instruction*](#)

- This resource, developed by the national Institute for Literacy, provides instructional guidance for early childhood caregivers, teachers, and leaders. Based on the research findings of the National Early Literacy Panel's report, this document lists early predictors of reading success, learning activities, and suggestions for professional development.

[*How Does Your Child Hear and Talk?*](#)

- This website from the American Language-Speech-Hearing Association contains information on the development of communication skills from birth to five years. It describes the typical milestones in a child's development.

[*The Importance of Oral Language*](#)

- Jerry Aldridge reviews various articles on oral language and studies done in classroom...could be a helpful summary of classroom practice to increase oral language.

[*Improving Reading Comprehension in Kindergarten Through 3rd Grade: A Practice Guide*](#)

[Language Development Chart](#)

- The Child Development Institute contains information on the wide range of the development of language in children from birth to age 8. Includes links to extra resources.

[*Learning to Talk and Listen: An Oral Language Resource for Early Childhood Caregivers*](#)

- Based on the findings of the National Early Literacy Panel's report, this resource emphasizes the importance of language development in the Pre-K years and the connection to early reading. It provides helpful instructional examples and strategies to use with Pre-K children to enhance their development of early language.

[*More Time to Talk: Language Building Tips for Center-Based Child Care Providers*](#)

[PDE Standards Aligned System.](#)

- For more specific supportive practices, select the tab entitled "Clear Standards," select "Download PDFs," and then select "Download Standards." Amongst the available files, you will find the following:
 - Pennsylvania Learning Standards for Early Childhood for Infants and Toddlers (p. 78-88)
 - Pennsylvania Learning Standards for Pre-Kindergarten (p. 58-61).
 - Pennsylvania Learning Standards for Early Childhood-Kindergarten (p. 63-72), Pennsylvania Learning Standards for Early Childhood-First Grade (p. 44-54) and Pennsylvania Learning Standards for Early Childhood-Second Grade (p. 44-54).

[*Preschool Language and Literacy: Use Interactive and Dialogic Reading*](#)

- This resource provides information and instructional tools to support the implementation of interactive and dialogic reading, both of which have strong evidence of positive results for children, particularly those with low language skills. This site provides video clips, PowerPoint slides, and tools to assist early childhood caregivers in using this strategy.

[Summary of the National Early Literacy Panel](#)

ESSENTIAL ELEMENT 3: Effective Assessment

Effective assessment is a key component of quality teaching and learning and is important for literacy instruction and student learning. Teachers, schools, districts, and the state need the knowledge and understanding of how to use data-driven decision-making to inform instructional practices and improve student learning.

RATIONALE

Evidence from effective schools research indicates the use of assessment results for identifying student, classroom, and school needs is highly related to school success (Bryk, Sebring, Allensworth, Luppescu, & Easton, 2010; Marzano, 2000). Taylor, Pearson, Peterson, and Rodriguez (2005), who worked with multiple schools to improve literacy instruction, found that when teachers were helped to understand how data could be used to improve literacy instruction, their instructional practices and student learning were enhanced. In schools where data are used effectively, teachers administer, analyze, and use the results of both formal and informal assessment tools to assess student strengths and needs, as well as plan and evaluate instruction. Administrators and teachers use grade level and school results to make curricular decisions and to select materials for school-level decisions. School districts make decisions about long-term planning and resource allocation based on assessment results. They also use the results of assessment to inform parents and the community about school strengths and areas for improvement. In other words, assessment is needed for multiple purposes and for multiple audiences. Assessment can be used for providing information about student performance at individual, classroom, school, and system-wide levels. Furthermore, it can be used to provide outcome data for accountability purposes and information that can improve the system.

Given its multiple purposes, a strong multi-dimensional assessment system is imperative to developing and implementing an effective literacy program for all students at all levels. Moreover, aligning assessments to concise and powerful standards allows students, parents, and educators to gauge and monitor students' performance (National Research Council, 1996). Assessment is not beneficial unless it aligns closely with the goals and instruction of the school. Thus, there is a need for a well-aligned system of assessment that measures what is essential at specific grade levels and, at the same time, enables schools to look longitudinally at the achievement of students. A comprehensive assessment plan should include summative, formative, benchmark, and diagnostic tests, each of which is used for specific purposes. (See the [Pennsylvania Standards Aligned System \(SAS\) Framework](#) for more information.)

A comprehensive assessment plan prevents a reliance on testing in which a single test score determines student placement, educational policy, or teacher evaluation. The International Reading Association, or IRA, (1999) addresses the inherent problems with making decisions based on a single measure and acknowledges the importance of varied assessments for the purposeful collection of data to inform instruction. In a benchmark study, Valencia and Buly (2004) gave diagnostic tests to students who had failed the fourth grade statewide reading assessment measure, assessing students' skills in word identification, meaning, and fluency. Few were weak in all three areas, but others were strong in some and weak in another. According to Valencia & Buly (2004), different instruction was needed for these various profiles of students. Moreover, Valencia and Buly (2004) cautioned educators from using the results of a single outcome measure to make instructional decisions about students. They found that assessments and instruction have a dynamic reciprocity in both measuring progress and providing informative data to shape effective and responsive instruction.

Morsy, Kieffer, & Snow (2010) recommended a system that includes standardized tests alongside of on-going formal and informal measures. An important feature of such an assessment system is its ability to identify deficiencies and provide multiple sources of evidence to measure the influence of instruction. Thus, appropriate interpretation and context of test data are imperative to improving teaching and learning (International Reading Association [IRA] & National Council of Teachers of English [NCTE], 2007). A robust system with thoughtful, appropriate interpretation allows educators to determine the effectiveness of instruction in advancing student achievement to grade-level benchmarks. Pennsylvania Department of Education's Standards Aligned System (SAS) includes "Fair Assessments" as one of the six areas essential for promoting student achievement, exemplifying the need for alignment among assessment, instruction, and clear standards.

One of the most important uses of assessment is its value in informing instruction. Literacy researchers have found that classroom-based assessments were systematically used on a regular basis in effective schools (Cunningham, 2006; Taylor, Pearson, Clark, & Walpole, 1999). Educators in these schools used results to identify needs, group students, and make decisions about instruction. Teachers could talk with great insight about what students could and could not do in various components of literacy.

In sum, assessment is the systematic and thoughtful interpretation of the results that afford responsive, data-driven practice. In a position statement about assessment, the National Association for the Education of Young Children (NAEYC) and National Association of Early Childhood Specialists in State Departments of Education (NAECS/SCE) highlight the importance of reliable, valid, and fair assessments to improve student learning (2003). To that end, educators need to be knowledgeable and develop expertise about the purpose of a measurement, literacy development, and effective pedagogical practices.

There is overwhelming consensus among national professional organizations of the importance of literacy assessment (IRA, 1999; IRA & NCTE, 2007; National Association for the Education of Young Children [NAEYC] & National Association of Early Childhood Specialists in State Departments of Education [NAECS/SDE], 2003). In 2007, IRA and NCTE updated a policy document entitled *Standards for the Assessment of Reading and Writing*. In 2009, NAEYC and IRA joined forces to publish a document, *Where We Stand: On Learning to Read and Write*, that addressed literacy assessments for early learners. According to these organizations, policies about assessment for young learners should emphasize more comprehensive assessment tools and responsive teaching. They also highlight the importance of such assessments for young English Language Learners (ELLs).

Assessing the ELL Student

The key to assessing ELLs is to assess what they know, not what they do not know (English). Some things to consider is how ELLs might show or demonstrate what they know, given that language structures and test formats may be barriers to students' abilities to understand the task or question, or to producing the answer. Some guiding ideas include:

- Assess what has been taught
- Assess in the same way you taught (e.g., visuals, manipulatives, scaffolds, graphic organizers, etc.)
- Design assessments to reflect the language proficiency of students
- Allow for performance-based assessments, re-tellings, oral reports, poster presentations, and other assessment formats that reduce the language demand
- Test the concept, not necessarily language

IMPLICATIONS

General

An effective assessment system must be congruent with and based on the standards, curriculum, and instruction of a school or district. The Pennsylvania SAS provides a comprehensive approach for student achievement. The assessment portion of SAS encompasses elements of assessments for federal and state initiatives, as well as classroom-based assessments for Local Education Agencies (LEAs). The four types of assessments recommended are summative, formative, benchmark, and diagnostic. The following charts include definitions of each type of assessment and examples of such measures.

Types of Assessments

Summative Assessments seek to make an overall judgment of progress made at the end of a defined period of instruction. They occur at the end of a school level, grade, or course, or are administered at certain grades for purposes of state or local accountability. They are designed to produce clear data on the student's accomplishments at key points in the student's academic career.

Examples:

- Pennsylvania System of School Assessment (PSSA)
- Keystone End of Course Exams
- End-of-unit exams
- Final exams

Formative Assessments are classroom-based assessments that allow teachers to monitor and adjust their instructional practices in order to meet individual student needs. Teachers use formative assessment strategies during instruction to provide feedback to students. This feedback allows teachers to adjust ongoing teaching and learning to improve students' achievement of intended instructional outcomes. Formative assessments can occur during lessons or observations of students in classrooms, or they can consist of more formalized instruments that also require qualitative analysis by teachers.

Examples:

- Running records, response logs, graphic organizers, curriculum based measures
- Observational tools: thumbs-up, eye contact, exit slips, questioning, discussion, think-pair-share

Benchmark Assessments are designed to provide feedback to both the teacher and the student about how the student is progressing towards demonstrating proficiency on state grade level standards. Well-designed benchmark assessments are standards-based assessments that measure the degree to which a student has mastered a given concept. These assessments measure concepts, skills, and/or applications. Benchmark assessments are reported by referencing the standards, not other students' performance. They also measure performance regularly, not only at a single moment in time.

Examples:

- Vendor Developed – 4Sight, Acuity, Assess2Know DIBELS®Next, AimsWeb (R-CBM, MAZE and Early Literacy Assessments)
- District/School Developed – common assessments administered across a grade level with a common rubric that benchmarks achievement by referencing state standards

Diagnostic Assessments determine each student’s strengths, weaknesses, knowledge, and skills. Administering diagnostic assessments permits the instructor to intervene at the point where students begin to struggle (such as in RTII) or remediate students that fall far below grade level. Diagnostic assessments allow teachers to adjust the curriculum to meet pupils’ unique needs.

Examples:

- GRADE, Classroom Diagnostic Tools (CDT), CORE: Multiple Measures; Developmental Reading Assessment (DRA)

A highly developed assessment system includes authentic reading and writing tasks, a balanced approach to using formal and informal assessments, classroom-based evidence, growth over time, and more involvement of students in the evaluation of their own work. Teachers can use assessment before, during, and after instruction to provide feedback and adjust ongoing teaching and learning to improve student achievement and to provide appropriate challenge for all students at their instructional levels. Students also can be asked to self-evaluate their work as a means of developing their knowledge and understanding of what they do and do not know. These assessment practices are in line with 21st century learning skills and will contribute to the success of Pennsylvania students in a world that requires complex literacy skills and abilities.

A well-developed assessment system can contribute to school district and system improvement. (This document contains an Appendix that can serve as a resource for creating an Assessment and Analysis Plan.) A school system that adopts a systemic approach that emphasizes the importance of a school-wide assessment system is well-positioned to use assessment data to inform teaching and learning practices. This assessment system should include assessment tools that are congruent with the district’s goals and curriculum. Multiple assessment tools are used in a system-wide assessment to ensure an accurate picture of student achievement. Stakeholders should use the results of assessment data in a variety of ways. For example:

- Parents and families can be kept informed of plans for teaching and learning and the progress being made by their children;
- School leaders can use the information for school-wide planning, to support their teachers, and determine professional development needs; and

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- Pennsylvania school boards can use the results of assessments to assist in their decision-making for school improvement.

In 2010, The Pennsylvania State Board of Education (PDE) determined that all LEAs would design an assessment system to do the following:

- Determine the degree to which students are achieving academic standards and their progress towards college and career readiness,
- Improve curriculum and instructional practices using assessment results grounded in both what students have learned and areas of need;
- Provide information requested by PDE regarding the achievement of academic standards; and
- Provide summary information, including results of assessments to the general public.

To support districts in the development of their assessment system, Pennsylvania provides guidance, resources, and materials. The Bureau of Assessment and Accountability is responsible for the development, administration, scoring, and reporting of the state's assessment system. State assessments include the following:

- Pennsylvania State System of Assessment (PSSA)
- Pennsylvania System of School Assessment-Modified (PSSA-M), an assessment based on modified academic achievement standards
- Pennsylvania Alternate System of Assessment (PASA), for students with the most significant cognitive disabilities.
- Keystone End of Course Exams.

The Bureau provides direction to schools and districts on assessment and accountability programs, evaluates school/student progress, and reports school performance for compliance with the No Child Left Behind Act of 2001 (2002). Other functions include the development of assessment anchors to better align curricula, instruction and assessment practices throughout the state; coordination of test development, administration, and reporting; and providing technical assistance for statewide and local assessment systems.

Resources for assessment are also available on [Pennsylvania's SAS website](#). For instance, the Diagnostic Testing Tool for Language Arts will soon be available to every district in the Commonwealth at no cost. This tool can aid educators in identifying students' needs and strengths at the grade level, classroom level, and individual student level. On SAS, teachers can also create assessments through the "Assessment Creator" or look for a variety of resources through the "Reference Materials" tab.

Assessment Resources for Essential Element 3

Pennsylvania Department of Education Resources

- [4Sight](#)
- [Academic Standards and Assessment; Reading, Writing, Speaking and Listening and Mathematics](#)
- [The Bureau of Assessment and Accountability](#)
- [Keystone Exams](#)
- [Pennsylvania Benchmark Assessment Initiative](#)
- [Pennsylvania System of School Assessment \(PSSA\)](#)
- [PVAAS](#)
- [Standards Aligned System – Assessment](#)

Other Professional Resources

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ESSENTIAL ELEMENT 4: Engagement and Resiliency

Fostering engagement and academic resiliency are keys to developing literate students.

RATIONALE

Engagement and academic resiliency are two important factors for developing literate students and motivating them to learn. If students are motivated to learn, they can develop the stamina to continue to learn and become productive citizens. In this section, engagement and academic resiliency are described, which is followed by a discussion about various topics (namely culture, the role of libraries, and technology) that are important for helping to promote engagement and academic resiliency.

Engagement is “the level of cognitive involvement that a person invests in a process” (Kelley & Clausen-Grace, 2009, p. 313). A highly engaged student is mentally, emotionally, and even physically involved in a task, while a disengaged student is barely aware of the task (Kelley & Clausen-Grace, 2009). Effective literacy programs focus on developing students who are engaged, interested, and motivated to read and write. Without such interest and motivation, the learning process is hindered. Engaged readers use skills and strategies to interact with text and are able to discuss text selections with peers and teachers (Guthrie & Wigfield, 2000; Morrow as cited in Kelley & Clausen-Grace, 2009). They approach reading with confidence and with the expected outcome of understanding what they have read. Reading brings pleasure for engaged readers who seek to expand their interests (Guthrie, 2001). Campbell, Voelkl, and Donahue (as cited in Kelley & Clausen-Grace, 2009) found that engaged readers demonstrate higher levels of reading achievement than those students who struggle to stay engaged with academic tasks.

Students’ engagement may waver depending on content, task, and text (Kelley & Clausen-Grace, 2009). In addition, students’ beliefs about themselves, especially self-efficacy (i.e., students’ belief in their capacities to read successfully), have implications for engagement in reading as well as reading frequency and comprehension (Wigfield, Guthrie, Tonks, & Perencevich, 2004). The extent to how well students have completed tasks and the feedback and encouragement they receive can impact their efficacy beliefs.

Furthermore, engagement in reading has helped students overcome obstacles, such as low family income and a less varied educational background (Guthrie & Wigfield, 2000). In fact, Guthrie (2004) found that more highly engaged readers from homes with fewer materials or educational advantages routinely out-performed less engaged readers from more advantaged home environments. Reading motivation predicts both the amount of reading and reading comprehension (Guthrie, Wigfield, Metsala, and Cox, 1999). According to Guthrie (as cited in

Allington, 2009), the correlation between engaged reading and comprehension was stronger than any demographic characteristics on the National Assessment of Educational Progress. Research consistently shows that more access to books results in more reading, and students who read more become better readers, writers, and also show improvements in vocabulary and grammar (Krashen, 2004). Engaged learners work in a motivated way; they employ whatever skills and strategies they have with effort, persistence, and an expectation of success (Guthrie & Wigfield, 1997). Purposeful reading that is intrinsically motivated will help develop engaged readers.

Intrinsically motivated readers are engaged in reading as a meaningful, enjoyable, self-enhancing pursuit. Guthrie and Wigfield (1997) found that by age 10, students have gained a repertoire of cognitive strategies for finding books of interest, getting the main idea, self-monitoring, understanding, and remembering what they have read that is personally significant. They read more than three times as much as children who scored at the bottom third on levels of motivation, spending more than thirty minutes per day reading for their own enjoyment. Intrinsic motivation energizes avid reading and creates self-improving readers. Self-improving readers are active, motivated to seek books of their own interests, and read to satisfy their curiosity. These motivations empower students to use their cognitive strategies to more fully enjoy stories or exposition (Guthrie & Wigfield, 1997). These authors found that students from Grades 3 to 8 decline in intrinsic motivation to read (Guthrie & Wigfield, 1997). Further, students may like reading but not be intrinsically motivated to read frequently.

When students are read to, they gain an appreciation for reading and develop an intrinsic motivation to read. According to Routman (1991),

reading aloud improves listening skills, builds vocabulary, aids reading comprehension, and has a positive impact on students' attitude toward reading. It is the easiest component to incorporate into any language program at any grade level. Reading aloud is cost-effective, requires little preparation, and results in few discipline problems. (p. 32)

Readalouds should be seen as a key aspect of instruction and should be included in literacy and learning goals. It allows struggling readers to give full attention to enjoying language and visual images while someone else is decoding (Allen, 2000).

Academic Resiliency is also a critical factor that influences literacy development. Academic resiliency refers to a student's ability to persist, even in the face of multiple academic difficulties (McTigue, Washburn, & Liew, 2009). Resilient students are those driven by their own goal of mastery. Fostering a student's academic resiliency is supported with decades of research. Bernard (1995) conducted longitudinal studies indicating that between half and two-thirds of children living in homes with risks (e.g., poverty, alcoholism, and even the travesties of war) do succeed despite their adversities. This ability to be resilient is innate and allows humans to develop qualities such as problem-solving skills, social competence, and a sense of purpose for

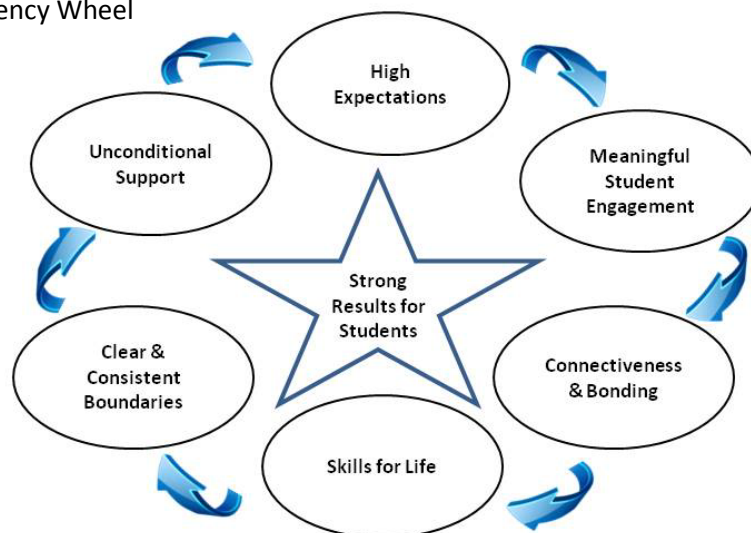
the future. While families and their surrounding community have the ability to enhance a child's ability to overcome some of the possible negative risk factors of life, so do schools. Bernard (1995) believes that to foster resilient students, all schools must strive to assist students through supportive relationships, help students set high expectations, and provide students with meaningful involvement and responsibility within the school.

The "Resiliency Wheel" (Henderson, Bernard, & Sharp, 2000, p. 8) diagrams a way schools and all youth-serving organizations can show young people how to successfully meet the stresses and challenges in life (see Figure 3). Henderson, Bernard, and Sharp (2000) suggest that schools and youth organizations should

- Provide care and support,
- Set and communicate high and realistic expectations,
- Provide opportunities for meaningful participation,
- Increase bonding or connectedness,
- Set clear and consistent boundaries, and
- Teach life skills.

Just as Henderson et al.'s (2000) six factors work for enhancing a student's personal resiliency, the same factors support academic resiliency. Effective literacy instruction has teachers working with students to set high, yet realistic, reading goals and engaging in meaningful literary experiences. Such lessons, in well-managed classrooms with clear and consistent boundaries and with a teacher providing unconditional support to all learners, offer students literary skills that can be utilized throughout a lifetime. Henderson et al.'s (2000) work was used as the basis for the Wellness and Resiliency Framework presented on the Pennsylvania Department of Education website ([PDE, 2010](#)).

Figure 3. The Resiliency Wheel



(Adapted from N. Henderson and M. Milstein, *Resiliency in Schools*, 2003, p. 12)

The concepts of academic resiliency and engagement interrelate, as both involve persistence. Students show resiliency and are engaged when they persevere through a difficult task, believing in their ability to achieve. Students with high levels of resiliency and engagement show higher levels of academic success. Adults must recognize the importance of planning appropriately leveled literacy activities to ensure student engagement while at the same time fostering each student's academic resiliency.

Below, we address specific topics that have an impact on students' motivation, engagement, and development of academic resiliency.

Culture. Pennsylvania's students represent over 200 home languages and a wide range of cultural beliefs and life experiences. Native Pennsylvanians throughout the state bring multiple variations of the English language and multiple cultural perspectives to classrooms. For instance, the way students approach reading and thinking and the way they engage in classroom tasks (e.g., collaboration vs. competition, social aspects of learning, thinking orientation (people first), etc.) is often influenced by cultural backgrounds and previous experiences. Culture may also influence various perspectives on nurturing and independence, oral vs. written communication, as well as differences in communication styles. Barriers to engagement may also include differing expectations of teachers, parents, and students. Lack of understanding of the school system and its expectations can affect the level of access and participation of students and their families. Student engagement may also be limited by socio-economic factors. Many factors influence family participation in schools: availability of transportation, work schedules, level of language proficiency and literacy in the home, and family members' interpretation of their role in the education of their children. Additionally, family participation may be limited by the ways in which schools communicate with them.

Moreover, textbooks and perspectives portrayed in the mainstream curriculum can, at times, be alienating and unmotivating to students who feel that their stories, voices, histories, and experiences are not reflected in the curricula. In consideration of the diversity of experiences, cultures, and languages of Pennsylvania students, recognizing and incorporating the rich "*funds of knowledge*" that students have into everyday classroom practice allows students to feel validated and have ownership in their learning experiences. The phrase "funds of knowledge" was coined by González, Moll, and Amanti (2005) and refers to the "historically developed and accumulated strategies (skills, abilities, ideas, practices) or bodies of knowledge that are essential to a household's functioning and well-being" (p. 92). Accessing and incorporating the knowledge and expertise students bring from their home environments into the classroom not only validates students, it also fosters motivation and engagement, enabling them to be more confident classroom participants. In summary, the understanding that student engagement with reading, and within the classroom in general, is tied to cultural practices and values is essential to helping students of diverse backgrounds remain engaged.

Libraries play a very important role in fostering engagement and academic resiliency. Libraries, classrooms, schools, and the community can all provide access to a wide variety of print materials and digital media. They offer both high interest fiction and up-to-date nonfiction in a range of reading levels and languages, seeking to be responsive to student abilities and interests. Further, school library programming serves to motivate students and foster habits of lifelong reading through special events such as author visits, literature circles, book clubs, and book talks. The [Guidelines for Pennsylvania School Library Programs](#) (PDE, 2011) state that school libraries can provide not only books or journals to read, but also access to computers to assess and monitor student reading.

According to Celano and Neuman (2001),

libraries continue to play a major role in fostering literacy in our nation, particularly among those segments of the populations that need special assistance in developing literacy skills, such as preschool and elementary school children. Public libraries are in a remarkable position to expose children to great quantities of print and meaningful language opportunities that researchers say are crucial to reading achievement. (p. 3)

Technology. With the explosion of technology and accessibility to the internet, technology plays a key role in fostering academic resiliency and engagement for students at all levels, but especially the secondary level. New literacies are required for participation in a digital world and for student success in the 21st century. The term “new literacies” is defined as follows in the *Standards for Reading Professionals* (Revised 2010):

Information and communication technologies, such as cellular telephones, personal computers, MP3 players, and the internet, that shape new forms of reading and writing, including the skills, strategies, and dispositions necessary to successfully use and adapt to the rapidly changing information and communication technologies and contexts that continually emerge in our world. (International Reading Association [IRA], 2010, p. 87-88)

In regards to assimilating the internet and information and communication technology (ICTs), the tenants of new literacies, into the existing literacy framework, the International Reading Association (IRA) stated that

there are at least four common elements that apply to nearly all of the current perspectives being used to inform the broader dimensions of this new research (Coiro, Knobel, Lankshear, & Leu, 2008): (1) The Internet and other ICTs require new social practices, skills, strategies, and dispositions for their effective use; (2) new literacies are central to full civic, economic, and personal participation in a global community; (3) new literacies rapidly change as defining technologies change; and (4) new literacies are

multiple, multimodal, and multifaceted; thus, they benefit from multiple lenses seeking to understand how to better support our students in a digital age. (2009, p. 2)

IMPLICATIONS

General

Now, we highlight the importance of building relationships with students that demonstrate respect and appreciation for their individual difference and interests, the key use of readalouds at all levels, and some notions about technology in the classroom.

Build relationships with students that demonstrate an appreciation for and understanding of individual differences and interests.

- Provide a caring relationship with students by supporting, respecting, validating, showing compassion, and modeling resiliency.
- Stress high expectations and achievement by believing in students' innate capacities.
- Provide student-centered instruction, structure for growth and risk, focus on strengths.
- Give students power and responsibility in interactive groups, e.g., making choices, solving problems, expressing opinion and reflecting (Goodwin, 2007).
- Use technology as a tool for building engagement.

Use Readalouds as a means of engaging and motivating students to read.

- Readalouds are risk free: Language and literacy can be enjoyed without risk.
- Readalouds build mental models that help students develop as self-motivated readers. These models can provide perspectives in addition to or in place of textbooks.
- Readalouds set the stage for learning to read and reading to learn. They help students with several critical reading components: reading motivation, word knowledge, syntax, story grammar, genre knowledge, authors' intentions, readers' choices, and understanding.
(Allen, 2000, p. 45-47).

Using the Internet in the Classroom

- İ **Become familiar with technology use.** Use the Internet and become aware of its potential for learning as well as its limitations. <http://www.iste.org/standards/nets-for-teachers.aspx>
- İ **Model connections.** Share your own online interactions with students. When relevant and appropriate, talk about how you are learning from others. Introduce students to learners who are passionate about the subjects they are studying.
- **Share student work.** Create a classroom portal online where you can regularly share student work. As much as possible, make sharing a natural part of the learning process, publishing interesting student blog posts, videos, or other quality artifacts that students create. Find ways to encourage discussion and interactions from readers online. With younger students, moderate those interactions. With older students, share strategies for moderating and vetting to help them become responsible for monitoring and responding to comments on their own. Have discussions on what appropriate interactions look like and how to make sure that participants are who they say they are. Help students learn how to respond to comments appropriately.
- İ **Practice and teach “reputation management.”** Help students hone strategies for the continual monitoring of their lives online - not just in what they produce, but also in what others publish and share about them. This might include setting up alerts or Rich Site Summary (RSS) feeds that deliver links when they are mentioned online or tagged in photos or learning simple strategies for searching for themselves online (Richardson, 2011).

Embed writing in literacy instruction by including written responses for engagement. Some sample activities include:

- Metacognitive logs
- Double entry journal
- Reflective writing
- Quick writes
- Graphic organizers
- Structured note taking
- Marking text
- Readers’ strategies list
- [Resource Area for Teaching \(RAFT\)](#)
- Writers’ response journals
- [Summarizing](#)
- Written retelling
- Digital storytelling
- Online writing such as blogs and class websites.

Birth to Age 5

Research in early literacy emphasizes that the natural mastery of skills for children birth to age five is through the enjoyment of books, the importance of positive interactions between young children and adults, and the critical role of literacy-rich experiences. These positive interactions play a critical role in developing literacy and language-rich experiences. When children have positive interactions with books, they are developing good feelings about reading, which motivates them to continue seeking out books and other literacy materials as they grow. The emotional bonds between young children and their families, other adults, and peers influence children's motivation and potential to learn (Snow, Burns, & Griffin, 1998). Children can:

- choose a favorite book,
- ask adults to read to them, or
- pretend to read.

If children are engaged and enjoying themselves, they are learning. Children benefit by experiences such as:

- purposeful and playful exposure to a variety of printed materials,
- hearing quality literature read daily, and
- participating in discussion about the pictures in books.

It is through positive, meaningful relationships and experiences that children gain confidence in their ability to explore and learn from the world around them. When families and other adults share stories, songs, and books with children, they not only model literacy skills but also give children the message early on that learning to read and write is important. Exposure to books and stories that have interesting content, rich vocabulary, and detailed illustrations are imperative for helping young children build oral language and vocabulary. Children benefit by experiences in which adults will:

- model rich spoken language,
- provide opportunities for children to experiment and play with the sounds that words make through rhymes, nonsense words, poems, music and chants;
- read books that contain rich language (rhyme, repetition and rhythm), and
- encourage children to use new vocabulary words when discussing pictures or real objects.

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In the classroom, teachers should provide:

- access to high quality and large quantity of literature in a variety of formats,
- learning centers for children to engage with words and pictures, and
- classroom libraries where learners can independently interact with quality books, such as in [Book Lists for Young Children](#)

In a world of interactive media, children are comfortable with using digital devices, and this media has a powerful influence on student engagement with literacy. In their position statement regarding technology in education ([NAEYC, 2011](#)), NAEYC recommends that early childhood educators recognize that technology and digital media are valuable tools to be used intentionally with children to extend and support active, hands-on, creative, and authentic engagement with those around them and with their world. Recommendations are to:

- allow children to explore digital materials in the context of human interactions, with an adult as mediator and co-player; and
- use shared technology time as an opportunity to talk with children, use new vocabulary, and model appropriate use, as with shared book reading.

Kindergarten-Fifth Grade

According to the Pennsylvania Literacy Framework,

a relationship exists between young children's motivation to learn and their perception that adults care about them as individuals and their learning. Caring is one element that appears to most strongly influence whether children enjoy school (Lumsden, 1999). This suggests that caring environments with clear, high expectations are the underpinnings of motivation. The nature of students' relationships with teachers is central to what makes school appealing or distasteful, inviting or uninviting. (Pennsylvania Department of Education [PDE], 2010, p. 2.15-2.16)

Teachers can help readers understand that with appropriately leveled texts and much reading they can improve their reading proficiencies; students will then successfully engage in the work and practice needed to become better readers. Students become engaged when they know teachers care about them, what they are learning matters and they possess the skills necessary to meet a given challenge. Several key teacher behaviors that promote motivation and several that undermine it are described below.

Factors that *motivate* reading and learning include:

- the teacher relates materials to students' lives,
- the teacher listens to all opinions and voices his or her opinions as well,
- the teacher encourages students to choose what they read (learn) at least most of the time,
- the teacher allows students to finish if they are reading (or writing) something of interest to them, and
- the teacher helps students find their own ways of learning to read.

Factors that *reduce* motivation to read:

- the teacher stops students when they are reading something interesting,
- the teacher tells students exactly what to do all the time,
- the teacher listens only to people who share his or her opinion, and
- the teacher gives homework that does not help or promote the students' understanding of the lesson or topic

(Fillman and Guthrie as cited in Allington, 2009, pp.155-156)

The most powerful way to engage students in reading and foster voluntary reading is to provide easy access to an assortment of interesting and appropriately difficult text in a variety of formats, including audio and digital. In addition, teachers and school librarians must provide opportunities to choose some of the books that will yield “high-success reading experiences are characterized by accurate, fluent reading with good understanding of the text that was read” (Allington, 2006, p. 98).

Effective teachers:

- model literacy and self-efficacy in the classroom (McTigue et al., 2009).
- observe all students carefully to know which struggle with engaging in academic activities (Kelley & Clausen-Grace, 2009).
- employ a predictable classroom structure that includes built-in written and oral responses to help students remain engaged in learning (Kelly & Clausen-Grace, 2009).
- provide students with desirable reading materials for independent reading, and encourage students to set goals with specificity, proximity, and difficulty in mind (McTigue et al., 2009).
- provide specific and accurate feedback that emphasizes student effort (McTigue, et al., 2009).

Sixth-Twelfth Grade

Research on adolescent literacy suggests that readers must be actively involved in reading (Hayes-Jacobs, 2006; Schoenbach, Greenleaf, Cziko, & Hurwitz, 1999). Without engagement and active participation, students will learn and retain little. According to Schoenbach, Greenleaf, Cziko, and Hurwitz (1999),

Students' engagement with and comprehension of texts is increased by activities that help them understand that reading is an active, problem solving-process to make meaning and that they must draw on all their knowledge and experiences because a good reader's whole self is involved in reading. (p.32)

Therefore, one would expect that reading in secondary classrooms would be interactive, engaging students on both a social and personal dimension, whether discussions occur in the classroom or in online web-based discussions. Motivated readers set reading purposes and goals, take stances as readers and acknowledge their personal connections, and responses to texts and situations (Schoenbach et al., 1999). Understanding that reading occurs on a continuum and that some readers may be good at one type of reading, and not as good at another type of reading, enables students to see themselves as "readers" and to tolerate their frustration by recognizing and building upon their reading strengths (Shoenbach et. al., 1999). In classrooms that support academic literacy and student engagement:

- Teachers model reading and thinking strategies with text (think-alouds, talking to the text, good reader strategies list).
- Teachers provide students with opportunities to work through difficult text using a variety of strategies.
- Classroom routines revolve around collaborative problem solving and dialogue about texts in a socially safe and supported environment.
- Students of all levels have opportunities for success.

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- Books Kids Will Sit Still for: The Complete Read-Aloud Guide by Judy Freeman, Bowker, 1990.
- More Books Kids Will Sit Still For: A Read-Aloud Guide by Judy Freeman, Bowker, 1995.
- Books Kids Will Sit Still For 3: A Read-Aloud Guide by Judy Freeman, Libraries Unlimited, 2006.
- The Read-Aloud Handbook by Jim Trelease (4th ed.) Penguin, 1995.
- The Read-Aloud handbook by Jim Trelease (6th ed.) Penguin, 2006
- Making Facts Come Alive: Choosing Quality Nonfiction Literature K-8 by Rosemary A. Banford and Janice V. Kristo, Christopher-Gordon, 1998.

Web-based Resources

- [Adolescent Literacy](#)
- [Family Literacy: A Strategy for Educational Improvement](#)
- [Guidelines for Pennsylvania School Library Programs](#)
- [International Society for Technology in Education](#)
- [Learning to Talk and Listen: An Oral Language Resource for Early Childhood Caregivers](#)
- [The Literacy Web](#)
- [National Governors Association \(NGA\) Center for Best Practices](#)
- [National Institute for Literacy](#)
- [Pennsylvania Department of Education's Standard Aligned System \(SAS\)](#)
- [Read, Write, Think](#)
- [Resiliency in Action](#)
- [Zero to Three: National Center for Infants, Toddlers and Families](#)

Web-based Informational Reading Systems

[Awesome Stories](#) - Collection of multimedia primary source materials such as photos, videos, audio, and historical documents

[Discover](#) - Collection of news articles about science, technology and the future

Web-based Interactive Learning Systems

[Fact Monster](#) - Students access reference material categorized by topics

[Fun Brain](#) - Games listed by title, subject and grade level

[Science News for Kids](#) - Science news for children ages 9-14

ESSENTIAL ELEMENT 5: Differentiation of Instruction

Differentiation of instruction is key to enhancing students' ability to learn. Teachers must be able to plan instruction that accounts for the differences that exist in students' skills, interests, cultures, and experiential backgrounds.

RATIONALE

Contemporary literacy classrooms are replete with students who have increasingly diverse language, learning styles, culture, and experiences. These differences exist along a continuum and within the context of an increased demand for higher, absolute levels of literacy. Faced with the challenge of meeting the needs of all students, educators are not only forced to recognize and understand the varying differences among students in their classrooms, they also need to employ a variety of “differentiated” instructional practices that maximize the literacy potential of each student. This differentiated instruction may include, for example, providing different levels of challenge, illuminating multiple pathways to acquiring information, or varying means of demonstration of understanding. According to Hall, Strangman, and Meyer (2003),

to differentiate instruction is to recognize students' varying background knowledge, readiness, language, preferences in learning and interests; and to react responsively. Differentiated instruction is a process to teaching and learning for students of differing abilities in the same class. The intent of differentiating instruction is to maximize each student's growth and individual success by meeting each student where he or she is and assisting in the learning process. (p. 3)

Proponents of differentiation purport that its principles and guidelines are grounded in years of educational research and have roots in theories of learning, such as Vygotsky's (1978) the Zone of Proximal Development. In addition to its alignment as an applied practice with learning theory, multiple intelligences, and current neuroscience research, the rationale for differentiation rests upon its ability to address learner variance (Lawrence-Brown, 2004; Tomlinson, 2003; Tomlinson & Kalbfleisch, 1998; Tuttle, 2000). Furthermore, other practices central to differentiation have been validated, including effective management procedures, instructional grouping, and student engagement (Ellis & Worthington, 1994).

In the implications section, there is a discussion of general principles about differentiation followed by a description of the Universal Design for Learning (UDL) and Response to Instruction and Intervention (RtII) in Pennsylvania. Each of these discussions provide information about how differentiation can be implemented in schools. In this section, implications are general in nature rather than divided into various age group segments. There is also a box that highlights important principles for instructing students who are English Language Learners (ELLs).

IMPLICATIONS

General

A historical and significant drawback of traditional instruction is that many teachers “teach to the middle” (Haager & Klinger, 2005, p.19). Differentiation means matching instruction and assessment to the needs of individual students and not simply to the needs of the average, or even majority, of learners in the classroom. In order to differentiate effectively, two foundational elements must be present. The first is quality instruction that is aligned to a coherent set of learning outcomes, indicating what students should know and be able to do. The second is a series of quality assessments that accurately describe student needs and learning differences. It is upon this foundation that instruction can be varied and adapted. The following variables, adapted from Rock, Gregg, Ellis, and Gable (2008), suggest ways that differentiation can be operationalized in the classroom:

Teacher Variables

- Teachers are aware of misconceptions about differentiating instruction.
- Teachers have adequate knowledge, resources and support toward change.
- There are reasonable plans for implementing, monitoring, and evaluating change.
- Teachers are aware of their own preferences and biases.
- School and classroom cultures value diversity and are positive and respectful.

Content Variables

- Standards for each content area are clear, available, and organized.
- An adjusted pacing guide is created.
- Student surveys are used to inform decisions about differing levels of task completion within a lesson or unit.

Learner Variables

- Readiness, interests, preferences, strengths, and learning needs are considered.
- Group dynamics are evaluated (e.g., competitive vs. cooperative).
- Needs for enrichment, supplementation and/or remediation are identified.
- Individualized Education Plans (IEP’s) are considered.

Instructional Variables

- Varied models of instruction are used (e.g., direct, strategic, constructivist, etc.).
- Multiple learning experiences, activities, and assignments are used to support lessons and units.

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- A safe, positive, and inviting learning climate is established.
- Instructional formats are varied (e.g., whole class, small group, one-to-one tutoring).
- Flexible grouping is used (e.g., heterogeneous, homogeneous, cross-age, between-class, within-class).
- Sound lesson structure is evident (beginning, middle, end).
- Visual supports (e.g., graphic organizers, multimedia presentations, video, models, real objects, photographs, diagrams, handouts, posters, whiteboards, outlines, pictures. etc.) are used in instruction.
- Instructional pace is varied (brisk vs. slow).
- High rate of opportunities for correct student responding (opportunities to respond) is evident.
- Frequent, immediate, and instructive feedback is provided.
- Accommodations and modifications are offered based on individual student need.
- Assistive technology is used and encouraged.
- Text materials of varying difficulty are offered.
- Manipulative materials are readily available.

Assessment Variables

- A continuum of assessment measures is utilized.
- Multi-method assessments are administered to the group or class to determine students' mastery of subject-specific content and individual strengths and needs.
- Teacher assessments (self, peer) are used to guide reflection and improve classroom practice.
- Student assessments (peer, self) are used to offer support and feedback to all learners.

Because reading instruction may be thought of as multi-dimensional, educators must be aware of the different dimensions of instruction (e.g., content, instructional delivery, time, grouping and materials), as well as how to differentiate within and across these dimensions, in order to meet a broad continuum of student needs, including behavioral factors such as motivation and effort.

Implications for Differentiation based upon Dimensions of Reading Instruction

Dimensions	
Content	With respect to differentiating <i>content</i> (the knowledge and skills taught relative to phonological awareness, phonics, fluency, vocabulary and comprehension), some students may be working on the basic comprehension skills of retelling, while other students may be summarizing important information from a text. Teachers can differentiate content and instructional focus using teacher led groups.
Instructional Delivery	<i>Instructional delivery</i> may be differentiated relative to explicitness through modeling, systematic instruction with appropriate scaffolding and pacing, and provision of immediate corrective feedback to students with sufficient opportunities to respond.
Time	<i>Time</i> may also be differentiated relative to how much is spent on the other dimensions. For example, how much time is spent on vocabulary? How much time is spent in small group instruction versus whole group instruction across a week? Do students have opportunities to interact and working independently?
Grouping	<i>Grouping</i> may be differentiated relative to number of grouping formats utilized in the classroom including whole group, homogeneous small group, partners, heterogeneous, mixed ability small group, independent and one to one.
Materials	<i>Selecting materials</i> for specific students and purposes is often a challenge. Materials should be evidence-based and adjusted to meet the needs of students.
Learning Environment	The dimensions of reading instruction are differentiated within a positive and safe <i>learning environment</i> that has clearly defined and consistently enforced rules and expectations.

(Adapted from: <http://www.centeroninstruction.org/differentiated-instruction-part-1>)

Literacy Instruction for English Language Learners (ELLs)

Fostering the literacy development of ELLs requires the consideration of four principles of instruction that consider language proficiency and background knowledge. While these principles are effective when in place for all students, they consider key aspects of second language acquisition that directly impact the needs of ELLs. The four principles are as follows:

1. Increase Comprehension
2. Increase Student to Student Interaction
3. Increase Higher Order Thinking Skills and the Use of Learning Strategies
4. Make Connections to Students' Background Knowledge

For more information regarding any of these principles, please see the following resources:

Kauffman, D. (2007). *What's different about teaching reading to students learning English?* McHenry, IL: Center for Applied Linguistics.

Two comprehensive frameworks for differentiating instruction are Universal Design for Learning (UDL) and Response to Instruction and Intervention (RtII).

Universal Design for Learning (UDL): Implications for Differentiated Instruction

UDL is an approach for designing curriculum and instruction that ensures all students can be successful. Adapted from the concept of *Universal Design* found in architecture, universally designed environments have features that minimize or remove barriers and allow access for all possible users (National Center on Universal Design for Learning [NCUDL], 2011). Similarly, UDL “builds flexible features into curriculum thereby removing barriers and inviting engagement for the widest range of students, while maintaining high standards” (NCUDL, 2011, p.1).

According to the National Reading Panel report (National Institute of Child Health and Human Development, 2000), a small number of studies identified the addition of speech to print via computers as a promising practice. Instructional technologies may encourage students to interact instructionally with text for greater amounts of time than they would with only conventional instruction. The report called for additional research relative to the use of internet applications, the use of computer technology to perform speech recognition, and the use of multimedia presentations in the context of reading instruction.

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The term “*universal design for learning*” means a scientifically valid framework for guiding educational practice that

(A) provides flexibility in the ways information is presented, in the ways students respond or demonstrate knowledge and skills, and in the ways students are engaged; and

(B) reduces barriers in instruction, provides appropriate accommodations, supports, and challenges, and maintains high achievement expectations for all students, including students with disabilities and students who are limited English proficient (Center for Applied Special Technology [CAST], 2011).

In addition, there are three primary principles that organize the guidelines for UDL implementation:

1. Provision of multiple means of representation or the “what” of learning, since there is not one means of representation that is optimal for all learners;
2. Provision of multiple means of action and expression or the “how” of learning, since there is not one means of action and expression that will be optimal for all learners; and
3. Provision of multiple means of engagement or the “why” of learning, since there is not one means of engagement that will be optimal for all learners in all contexts (CAST, 2011).

In order to facilitate the development of expert learners, who are distinguished by their resourcefulness, knowledge, goal-directed behavior and motivation, primary UDL curricular components that include goals, methods, materials and assessments are utilized. For more information on UDL, see:

- [Center for Applied Special Technology \(CAST\)](#)
- [Focus on Effectiveness](#) (resources to improve classroom results by combining instructional practices and technologies)
- [National Center on Universal Design for Learning](#)
- [PA Standards Aligned System: Universal Design for Learning](#)
- [Reading and Math Matrices](#) (Evidence and products for the use of technology that supports students with special needs)
- [Technology and Teaching Children to Read](#)

Response to Instruction and Intervention (RtII)

Effective reading instruction and the implementation of evidence-based practices lie at the very heart of Response to Intervention (RtI). RtI is the practice of providing high quality instruction and intervention matched to student need, monitoring progress frequently to make decisions about changes in instruction or goals, and applying student response data to important educational decisions. When this process is adopted, systematic and systemic decision-making is applied to decisions in general, remedial, and special education, creating a well-integrated system of instruction/intervention that is guided by student outcome data (Batsche et al., 2005). For the past several years, Pennsylvania has provided coordinated training and technical assistance in an effort to support the adoption and sound implementation of the [Response to Instruction and Intervention \(RtII\)](#) framework and has recognized that standards-aligned core instruction lies at the heart of RtII and fundamental to technically adequate implementation and sustainable practices and leadership.



It is important for educators to establish connections between common frameworks. Both UDL and RtII share a common framework – both are premised on the use of a comprehensive, multi-tiered system that focus on a solid core of practices, with supplemental interventions and strategies that build upon this core. Furthermore, when the components of quality reading instruction are efficiently and effectively organized and delivered within a comprehensive service delivery framework, progression toward systems alignment and better outcomes is possible.

The intent of multi-tiered systems of support is to use student performance data to allocate instructional resources to improve learning for all students using the most effective, efficient, and equitable means possible. The sound integration and scaling of RtII framework components over time holds significant promise for transforming current systems and ultimately sustaining the following outcomes:

- Shared leadership for student learning facilitated by strong principal leadership and ongoing, job-embedded professional learning
- Rapid cycles of improvement relative to teaching and learning
- Data-driven cultures that make informed curricular, assessment, and instructional decisions
- Implementation of research-based instruction using a continuum of reliable and valid data sources
- Improved and sustainable student learning outcomes

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The following checklist may be helpful to framework implementers and was adapted from Gersten et al.'s (2008) guide entitled *Assisting Students Struggling with Reading: Response to Intervention (RTI) and Multi-Tier Intervention in the Primary Grades*. For a review of the complete checklist, please visit <http://www.readingrockets.org/article/30663>.)

1. All students are screened for potential reading problems at the beginning of the year and again in the middle of the year, and the progress of students who are at elevated risk for developing reading disabilities is regularly monitored.
2. Differentiated reading instruction is provided for all students based on assessments of students' current reading levels (Tier 1).
3. Intensive, systematic instruction is provided on up to three foundational reading skills in small groups to students who score below the benchmark score on universal screening. Typically, these groups meet between three and five times a week for 20 to 40 minutes (Tier 2).
4. The progress of students receiving Tier 2 support is monitored at least once a month. These data are used to determine whether students still require intervention. For those students still making insufficient progress, school wide teams should design a Tier 3 intervention plan.
5. Provide intensive instruction (Tier 3) on a daily basis that promotes the development of the various components of reading proficiency to students who show minimal progress after reasonable time in Tier 2 small group instruction.

RTI is both a systematic and systemic roadmap for organizing differentiated practices so that student needs are met as efficiently and effectively as possible through:

- Alignment of instructional foci to Pennsylvania standards within and across tiered supports
- Analysis and synthesis of data across multiple sources
- Creation of flexible instructional groups
- Evaluation of effectiveness of classroom instruction
- Refinement of instructional practices matched to student need
- Identification and monitoring of individual students in need of intensive differentiated instruction/intervention
- Establishment of structures that support ongoing, differentiated professional learning relative to student needs and systems level outcomes

For more information on RtI/RtII, see:

- [Center on Instruction](#)
- [National Center on Response to Intervention](#)
- [Pennsylvania Standards Aligned System: Response to Instruction and Intervention](#)
- [Pennsylvania Training and Technical Assistance Network](#)
- [RtI Action Network](#)

Additional Resources for K-12 Educators

Books

1. *Differentiated Instruction for Students with Learning Disabilities: Best Teaching Practices for General and Special Educators*, by William Bender.
This book provides ideas, examples, and strategies for implementing up-to-date differentiated instruction when working with students with learning disabilities.
2. *Curriculum Mapping for Differentiated Instruction K–8*, by Michelle Langa and Janice Yost.
This guide provides hands-on materials to guide instruction through the use of curriculum mapping and instructional planning in the classroom.
3. *Differentiated Instructional Strategies in Practice: Training, Implementation, and Supervision*, by Gayle Gregory.
This book has a variety of strategies for teachers to use when differentiating instruction in the classroom.
4. *Differentiation in Practice: A Resource Guide for Differentiating Curriculum, Grades K–5*, by Carol Ann Tomlinson and Caroline Cunningham Eidson.
This guide provides teachers with lesson plans, units, and materials they can use to carry out differentiated instruction in the K–5 classroom.
5. *Differentiation in Practice: A Resource Guide for Differentiating Curriculum, Grades 5–9*, by Carol Ann Tomlinson and Caroline Cunningham Eidson.
This guide provides teachers with lesson plans, units, and materials they can use to carry out differentiated instruction in the 5th–9th grade classroom.
6. *Differentiation in Practice: A Resource Guide for Differentiating Curriculum, Grades 9–12*, by Carol Ann Tomlinson and Cindy A. Strickland.
This guide provides teachers with lesson plans, units, and materials they can use to carry out differentiated instruction in the 9th–12th grade classroom.

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7. *Differentiated Instruction Guide for Inclusive Teaching*, by David P. Riley and Anne M. Moll.
This book offers a simple approach that helps teachers to carry out a variety of differentiated instructional approaches in the classroom. Practitioners will find the assessment plans and the overview of the general education curriculum especially helpful.
8. *Instructional Strategies for Differentiated Learning*, by Wendy Conklin.
This book is an easy reference for a teacher that provides current research-based approaches to differentiating instruction that could easily be put into classroom practice.
9. *Drumming to the Beat of Different Marchers: Finding the Rhythm for Differentiated Learning*, by Debbie Silver and Peter H. Reynolds.
This book offers teachers a quick reference to research-based approaches for differentiating instruction. The authors also include original poetry throughout the book.
10. *Differentiating the High School Classroom*, by Kathie Nunley.
This book offers practical advice to help teachers overcome the obstacles they face when attempting to carry out differentiated instruction in the classroom.
11. *The Teacher's Toolbox for Differentiating Instruction*, by Linda Tilton.
The information presented in this book provides teachers with multiple approaches to differentiating instruction in all academic content areas.

Recommended Websites

- [The Access Center: Improving Outcomes for All Students K-8](#)
- [Alliance for Excellent Education](#)
- [Best Evidence Encyclopedia](#)
- [Florida Center for Reading Research](#)
- [The IRIS Center](#)
- [National High School Center](#)
- [Pennsylvania Standards Aligned System \(SAS\)](#)
- [Reading Rockets](#)
- [Vaughn Gross Center for Reading and Language Arts](#)
- [What Works Clearinghouse](#)

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Tomlinson, C. A. (2003). Deciding to teach them all. *Educational Leadership*, 61(2), 6-11.

Tomlinson, C. A., & Kalbfleisch, M. L. (1998). Teach me, teach my brain: A call for differentiated classrooms. *Educational Leadership*, 56(3), 52-55.

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ESSENTIAL ELEMENT 6: Disciplinary Literacy

The development of a literate individual requires that educators in all of the academic disciplines incorporate literacy instruction as a means of enhancing students' ability to learn the content of the discipline.

RATIONALE

According to the National Assessment of Educational Progress (NAEP) scores, secondary students' literacy has not changed much since the early 1990's (Grigg, Donahue, P. & Dion, G., 2007). Yet at the same time, demands for higher literacy levels for jobs, for civic engagement, for health, and for academic success have increased (Shanahan & Shanahan, 2008). The NAEP data suggest that students may have developed general literacy skills "but not the specialized strategies, vocabulary and knowledge base required for understanding complex discipline specific texts" (Lee & Spratley, 2010, p. 2).

Although some general comprehension strategies (such as summarization) and heuristics (such as study guides), for understanding texts are useful across disciplines (Heller & Greenleaf, 2007), every academic discipline tends to use literacy differently to construct knowledge and to communicate that knowledge. What counts as evidence for reasoning and what is important to specify differs from discipline to discipline. The student who can read a physics text with understanding may not be able to comprehend and interpret the themes in Macbeth. "The differences among the texts of different disciplines result in unique challenges for readers" (Shanahan & Shanahan, 2008, p. 53).

Developers of the Common Core Standards recognized the importance of *disciplinary literacy*, the use of literacy in understanding and communicating within different content areas by developing literacy standards for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects. Content area teachers can most effectively help students develop disciplinary literacy because they best know and understand the importance and use of literacy within their disciplines.

Disciplinary literacy goes far beyond using a "set of strategies or tools brought in to the disciplines to improve reading and writing of subject-matter texts" (Moje, 2008, p. 99); it is using literacy in the service of understanding the discipline itself. "To develop complex knowledge in any discipline, students need opportunities to read, reason, investigate, speak, and write about the overarching concepts within that discipline" (McConachie, et al., 2006, p. 1). Disciplinary literacy, using literacy as it is used in the discipline, is necessary if students are going to be proficient in both the content and the means of communicating it.

Disciplinary literacy is most often thought of as appropriate for secondary students and teachers; however, the foundation for disciplinary literacy is developed from the very beginning. Children develop concepts and vocabulary that are crucial to understanding disciplines in the early years before they begin formal education. Elementary students have rich opportunities to develop disciplinary language and conceptual foundations for more intensive study in the secondary years.

IMPLICATIONS

Disciplinary literacy is appropriate in ALL content areas, such as the fine arts, physical education, foreign languages, and health; however, we are initially focusing on four major areas: English/language arts, science, mathematics, and social studies. Because of the emphasis on learning in the academic disciplines in the middle and high school, the implications begin at the secondary level. Specific implications are provided for each of the four major academic disciplines.

Secondary 6 – 12

Disciplinary Literacy in English Language Arts (ELA)

While the authors of the Common Core State Standards (CCSS) define students' literacy development as a responsibility that cuts across all content areas and technical subjects, they also cite "the unique, time-honored place of ELA teachers in developing students' literacy skills" (Common Core State Standards [CCSS], 2010, p. 4). Similarly, within the discipline of ELA, literature (stories, drama, and poetry), has held a time-honored place. With their increasing emphasis on career and college readiness as students move up in the grades, the CCSS follow NAEP in requesting that all teachers, including ELA teachers, incorporate more informational texts into their instruction. For ELA teachers in particular, this request means giving more attention to *literary nonfiction* (e.g., essays, speeches, biographies, and autobiographies, among others) than has generally been the case to help students meet the changing literacy demands of an information-rich world. In addition to becoming more skilled at handling this subgenre of informational text (i.e., literary nonfiction), students are expected to work with texts of increasing complexity and with multiple texts simultaneously.

Similarly, students are expected to write across a variety of text types including argument, informative/explanatory, and narrative. In addition, they are expected to use technology to produce and distribute their writing, "taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically" and to "research to

build and present knowledge” using “multiple authoritative print and digital sources...” (CCSS, 2010, p. 46).

As teachers who traditionally distinguish themselves, for one, by the amount of explicit attention they give to reading and writing, ELA teachers are in a unique position to take up the disciplinary literacy charge outlined for them by the CCSS. Specifically, ELA teachers will need to give increasing attention to supporting students in learning how to:

- grapple with complex texts including essays, speeches, and biographies, among others, and tasks related to those texts in ways authentic to the discipline:
<http://www.readwritethink.org/classroom-resources/lesson-plans/having-multigenre-autobiography-project-1103.html>
- understand, analyze, and use literary nonfiction and other informational texts (including non-print) that reflect the ways knowledge is mediated in contemporary culture
<http://www.readwritethink.org/classroom-resources/lesson-plans/argument-persuasion-propaganda-analyzing-829.html>
<http://www.readwritethink.org/classroom-resources/lesson-plans/twenty-first-century-informational-30581.html>
- make significant links between the disciplinary ways of reading, writing, and thinking in the classroom and their literacy practices in their out-of-school time
<http://www.readwritethink.org/classroom-resources/lesson-plans/using-microblogging-social-networking-1171.html>
- move from literal comprehension to higher-order thinking skills such as analysis and interpretation of single texts of multiple genres and to synthesize meaning across several texts to complete reading and writing tasks as part of their normal instruction
<http://www.readwritethink.org/classroom-resources/lesson-plans/harlem-renaissance-retrospective-connecting-252.html>

Again, ELA teachers are in a unique position here, arguably, because their main professional organization, National Council for Teachers of English (NCTE) has outlined standards related to these skills as well as ways to address them in a variety of other documents:

- <http://www.ncte.org/positions/21stcenturyliteracy>
- <http://www.ncte.org/positions/literacy>
- <http://www.ncte.org/positions/standards>

Disciplinary Literacy in Math

Many students, and even teachers, would claim they do little reading and writing in mathematics; mathematicians would claim the opposite. Mathematicians read and write to participate in problem solving. The difference is that the type of text read and the form writing takes are unique. Reading and writing in mathematics often occur simultaneously and requires one to move fluidly between different representations of the work, such as:

- diagrams,
- language,
- symbols,
- real world context, and
- concrete models

Mathematical text is very complex. It contains more concepts per sentence and paragraph than other types of text. It uses symbols and numbers and may not travel in typical left-to-right fashion. It often has accompanying graphics (graphs or diagrams) which much be understood to make meaning complete. Vocabulary words used often have unique meanings in mathematics. Mathematics readers have to pay attention to small words such as *the*, *and*, *is*, or *any*, which can often be skipped over while making meaning reading other types of text (Kenney, Hancewicz, & Heuer, 2005).

Writing in mathematics is complex.

- It involves producing the same forms of text: mathematical language, symbols and numbers, and graphics.
- It's not just about what was done to solve the problem, but why it was done using sound mathematical reasoning.
- It must communicate with precision

All of these unique qualities of reading and writing in mathematics are reflected in the CCSS Standards for Mathematical Practice.

Disciplinary Literacy in Science

Reading and writing are central to the discipline of science. Consider this: scientists do not simply start designing or running experiments. Rather, they begin by understanding past research and findings. Science texts are used to develop the background knowledge necessary to formulate new research questions and design new investigations.

Science literacy instruction should engage students in making sense of scientific texts as a form of scientific inquiry. “When science literacy is conceptualized as a form of inquiry, reading and writing activities can be used to advance scientific inquiry, rather than substitute for it” (Pearson, Moje, & Greenleaf, 2010, p. 459). In fact, the skills that help make sense of scientific phenomena are in fact, consistent, if not identical, to those needed to formulate meaning during reading. A shared skill set includes:

- making sense of data
- drawing conclusions
- constructing arguments based on evidence
- questioning
- visualizing
- determining meaning of vocabulary
- communicating ideas

When this instruction is done well, it creates a reciprocal relationship between scientific understanding and literacy. One informs the other, resulting in positive impacts in both science and reading and writing. Conversely, minimizing or ignoring the need to address literacy within the discipline of science is to create a dependency on the teacher for all background knowledge, which places the learner in a passive role and undermines the ways in which the discipline of science actually occurs.

Scientific reading:

- Is densely packed with a high proportion of discipline-specific, technical words
- Often includes elaborate charts and diagrams which illustrate text concepts

Readers of science read:

- To clarify their understanding of a scientific principle or phenomenon
- To verify or augment their understanding of a scientific phenomenon
- To understand how a scientific phenomenon is important in a theoretical or practical sense
- In search of truth the reader must be convinced that descriptions of experiments and interpretation of results is valid.

Readers of science attend to:

- Precise definitions of technical terms which denote both concepts and processes
- Images, charts and graphs to illustrate the text
- Descriptions of experiments and results

- Explanations of scientific phenomenon
- Surprising results that which reveal misconceptions

Science teachers are well-versed in literacy practices of their disciplines and are the appropriate guides to teach their students these skills.

Disciplinary Literacy in Social Studies

While all academic disciplines depend heavily on the development of strong literacy skills, the social studies (comprising the disciplines of civics and government, economics, geography and history) require continuous skill development in reading and writing connected text and visual images (such as political cartoons and maps). The rapid and accelerating changes wrought by the digital age have added further gravity and sophistication to how each student gains, analyzes, manages, and communicates content and skills.

Beyond essential reading and writing skills, literacy in social studies includes the ability to:

- Learn to use technology to access information effectively and efficiently
- Interpret primary and secondary historical documents
- Evaluate the reliability of sources
- Establish a context in time, culture, place, etc.
- Focus on cause and effect
- Understand advanced geographic information systems
- Access and understand U.S. Supreme Court decisions
- Critique different market economies.

Of course, there are mixed blessings to the revolution that has changed the way students learn and relate to the world. Although vast oceans of data and information are an instantaneous click away, the literacy skills required to search, manage, and discern the validity of the sources of knowledge are time-consuming and dependent upon careful practice and experience.

Historical thinking is at its core a search for truth. Readers of history approach text with the stance of a skeptic, questioning the authenticity of the author, the sources and validity of the author's conclusions. Primary and secondary sources are read with application of background knowledge related to time, place and culture. Sources are evaluated and interpreted, not accepted at face value.

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The following table compares literacy across four disciplines, providing recommendations and challenges to literacy instruction.

Disciplinary Literacy Table

	Science	Social Studies	English	Math
Overview	Science literacy instruction is a form of scientific inquiry that models the manner in which the larger scientific community builds background knowledge prior to developing new research questions and investigations.	Social studies literacy (history, economics, geography, and civics) includes the ability to analyze oral and written communication in understanding the past through close scrutiny of primary and secondary sources. It requires knowledge and analysis of economic laws, human behavior, individual rights, and the common good of society.	Disciplinary literacy in ELA engages students in oral and written exchanges of ideas around challenging texts. It is characterized by the type of inquiry, analysis, and interpretation used by experts in fields, including language and literature studies, among others.	Literacy in math is embedded in the solving of problems from the concrete to the abstract.
Specific Literacy Skills	<p>Students need to be able to gain knowledge from challenging texts that often make extensive use of elaborate diagrams and data to convey information and illustrate concepts (CCSS, 2010).</p> <p>Describe experiments & results. Define and use discipline specific words.</p>	<p>History: Analyze, evaluate, and differentiate primary and secondary sources.</p> <p>Question authenticity of author or source.</p> <p>Look for evidence of bias within text and within self.</p> <p>Based on historical evidence, create historical explanations or</p>	Students read, write, and talk about texts including both literary and informational works to understand their meaning and their craft and structure. They draw inferences and cite textual evidence to support analysis and interpretation. They integrate knowledge and ideas within single texts as well as across texts of increasing complexity. They produce original written works of	<p>Define and use discipline specific words.</p> <p>Make sense of charts, diagrams, and symbols to solve problems.</p> <p>Contextualize and define mathematical symbols.</p>

	<p>Ask questions as they read about what is new. They question the facts, design of experiments and interpretations of results. Truth is being convinced that the experiments and explanations given, in fact, demonstrate what is claimed.</p>	<p>interpretation. Use names, dates, and other facts as anchors to assist in making historical interpretations.</p> <p>Economics: Use economic laws and data to analyze economic behavior and make predictions of economic activity. Data can also be used to explain vital concepts and trends.</p> <p>Civics: Students read, research, write, and discuss documents, events, and cases that shape citizenship, government policy, and societal norms.</p> <p>Geography: Employ data, research, and readings in analysis of human-environmental interactions.</p>	<p>various text types including argument, informative/explanatory, and narrative. They research to build and present knowledge. They draw evidence to support analysis, reflection, and research when writing.</p>	
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Recommendations	<p>Incorporate regular opportunities for reading and writing as an aspect of scientific inquiry.</p> <p>Use high leverage practices for teaching vocabulary.</p> <p>Apprentice students in the skills to make sense of complex diagrams and charts.</p>	<p>Incorporate experiences and “real world” sources that enhance the development of literacy skills and relevancy to the lives of students.</p> <p>Use primary and secondary source documents with emphasis on recognizing biases in sources, comparing evidence, situating evidence in context, and taking into account different perspectives and multiple causes and results.</p>	<p>Include more informational texts as students move up in the grades; apprentice students in interpretive tasks that span ideas from across entire texts and multiple texts by single or multiple authors; and engage students with challenging texts.</p>	<p>Read to make sense of the solutions of others.</p> <p>Write solutions in multiple representations.</p> <p>Diminish focus on the “one right answer;” increase focus on communicating solutions precisely, including why the solution is valid.</p>
Challenges	<p>The primary challenge is the density of scientific text. Each sentence is packed with a high proportion of technical, specialized vocabulary. Science reading is like learning a foreign language for some students.</p>	<p>Traditional textbooks tend to present information as authoritative whereas historical reasoning requires interpretation and analysis.</p> <p>Incorporate materials for all disciplines from outside the realm of traditional textbook publishing companies.</p> <p>Emphasize development of 21st century learning skills and redesign educational experiences to emphasize literacy as well as strict content.</p>	<p>Traditional discourse patterns in classrooms are characterized by closed-ended questions focusing on recall of information; an atomistic approach to analysis and interpretation of texts; a predominant focus on canonical literary fiction; and a focus on writing primarily as product.</p>	<p>Unlike common language, words in mathematics must be used with precision. For example, “the” is very different from “a.”</p>

Elementary K - 5

In primary and intermediate grades, children can begin to develop the vocabulary and the conceptual thinking necessary for success in disciplinary literacy. Interactive informational book readalouds in the elementary grades can lead to understanding vocabulary and comprehension of concepts associated with science and social studies. Readalouds with narratives can lay the foundation for understanding literature. Informational texts should have a prominent place in elementary classrooms. For some children, these texts provide an entry to literacy that narratives do not. For all children, these texts provide background knowledge for later focus on disciplinary literacy. Students should have opportunities to:

- become familiar with text structures found in both narratives and in informational books.
- recognize that narratives have a beginning, middle, and end.
- recognize that most informational books do not have to be read cover-to-cover.
- learn about setting, characters, problems, events, and resolutions.
<http://www.readwritethink.org/classroom-resources/lesson-plans/teaching-about-story-structure-874.html>
<http://www.readwritethink.org/classroom-resources/lesson-plans/plot-structure-literary-elements-904.html?tab=1#tabs>
- understand character motivation, a very important element in more complex narratives. <http://www.pdesas.org/module/content/resources/4597/view.ashx>
- experience description, cause and effect, problem and solution, compare and contrast, and generalization and examples in nonfiction texts, expository text structures that will be important in social studies, science, and math.
<http://www.readwritethink.org/classroom-resources/lesson-plans/exploring-cause-effect-using-925.html>
- develop academic vocabulary. (This task is particularly important for English language learners and for students who find learning to read and write more difficult.)
<http://www.readwritethink.org/professional-development/strategy-guides/supporting-vocabulary-acquisition-english-30104.html>
- be introduced to morphology because much of the discipline-specific vocabulary in science is built on Latin and Greek roots: seismograph, magnitude, dermatitis.
<http://www.readwritethink.org/classroom-resources/lesson-plans/rooting-meaning-morpheme-match-880.html>

- practice using graphs, tables, charts, and illustrations to extend understanding of informational books.
- learn to use book supports (such as tables of contents, indexes, and glossaries) and Internet searching strategies to prepare for the more complex tasks they will face in the disciplines. <http://www.pdesas.org/module/content/resources/4582/view.ashx>
<http://www.readwritethink.org/classroom-resources/lesson-plans/using-science-texts-teach-413.html>
<http://www.readwritethink.org/classroom-resources/lesson-plans/adventures-nonfiction-guided-inquiry-183.html>
- learn to make sense of information gathered from diverse sources by identifying misconceptions, main and supporting ideas, conflicting information, and point of view or bias.
- practice writing different kinds of informational texts: persuasive texts, reports, recounts, and procedural texts
<http://www.readwritethink.org/classroom-resources/lesson-plans/cooking-with-words-creating-1018.html?tab=1#tabs>
<http://www.readwritethink.org/professional-development/strategy-guides/persuasive-writing-30142.html?main-tab=1#main-tabs>

0 – 5 years

Although disciplinary literacy is emphasized at the secondary level, the foundation for understanding the disciplines can be laid in the early preschool years.

- Parents, caregivers, child care centers, and libraries can introduce young children to the concepts and the vocabulary of disciplines through direct experience with items (such as living and non-living) and through reading “concept” books with children. These books can introduce children to vocabulary and ideas that can later inform disciplinary understanding.
- Concrete experiences with real items (such as examining vegetables or experimenting with things that float) help children to develop vocabulary and beginning disciplinary concepts.

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- Interactive readalouds are an effective way to engage young children with disciplinary ideas and vocabulary. Encouraging children to point out illustrations of various items, such as animals, vehicles, colors, articles of clothing, and parts of the body helps them internalize the vocabulary necessary for these areas and form conceptual categories. Readalouds also introduce children to informational and narrative “book language.”
http://pa.webjunction.org/c/document_library/get_file?folderId=108973551&name=D_LFE-29860033.pdf. (listing of suggested informational books for read alouds)
<http://www.readwritethink.org/parent-afterschool-resources/tips-howtos/make-most-reading-aloud-30565.html>
- Asking children to group items according to function, color, sound, etc. can prepare children to organize their knowledge and develop categories, a very important thinking skill for later learning.
- Having children talk about their observations of the world around them helps them to be better observers and encourages them to use vocabulary.
- Readalouds and discussion of academic vocabulary prepare children to meet the demands of disciplinary literacy as they continue through elementary and secondary school.

References for Essential Element 6

Common Core State Standards Initiative [CCSS]. (2010). *Common core state standards for English language arts & literacy in history/social studies, science, and technical subjects*. Retrieved from http://www.corestandards.org/assets/CCSSI_ELA%20Standards.pdf

Grigg, W., Donahue, P. & Dion, G. (2007). *The nation's report card: 12th-grade reading and mathematics 2005* (NCES 2007-468). Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Analysis of the 2005 NAEP data for 12th grade.

Heller, R., & Greenleaf, C. L. (2007a). *Literacy instruction in the content areas: Getting to the core of middle and high school improvement*. Washington, D.C.: Alliance for Excellent Education. Retrieved from http://www.all4ed.org/publication_material/reports/literacy_content

Report that argues for advanced literacy instruction for students in all academic areas so that they may be successful in meeting 21st century literacy demands. Presents several straightforward recommendations for policymakers at the district, state, and federal levels.

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Kenney, J. M., Hancewicz, E., & Heuer, L. (2005). *Literacy strategies for improving mathematics instruction*. Alexandria, VA: Association of Supervision and Curriculum Development.

Good resource for teachers to integrate literacy and mathematics instruction for the improvement of both. Includes ideas about helping children decode mathematical texts and interpret graphic representations.

Lee, C. D., Spratley, A. (2009). *Reading in the disciplines: The challenges of adolescent literacy*. New York, NY: Carnegie Corporation of New York. Retrieved from http://carnegie.org/fileadmin/Media/Publications/PDF/tta_Lee.pdf

Long report describing general literacy strategies that might be used across many disciplines, and specific literacy skills needed for science, history, literature, and mathematics. Also suggests ways to teach both content knowledge and reading strategies together.

Moje, E. B. (2008), Foregrounding the disciplines in secondary literacy teaching and learning: A call for change. *Journal of Adolescent and Adult Literacy*, 52, 96-107. Retrieved from <http://www.clemson.edu/aophub/documents/call%20for%20change.pdf>

Good introduction to the concept of Disciplinary Literacy. Moje explains current research and challenges to developing disciplinary literacy practices.

McConachie, S., Hall, M., Resnick, L., Ravi, A. K., Bill, V. L., Bintz, J., & Taylor, J. A. (2006). Task, text, and talk: Literacy for all subjects. *Educational Leadership*, 64(2), 8-14. Retrieved from <http://www.innovationlabs.com/newhighschool/2006/reading%20materials/literacy.pdf>

Short article presenting five principles of Disciplinary Literacy in the classroom. Gives classroom examples from the major disciplines to show how these principles work in practice.

Pearson, P. D., Moje, E. B., & Greenleaf, C. (2010). Science and literacy: Each in the service of the other. *Science*, 328(5977), 459-463.

Addresses synergies between inquiry science and literacy teaching and learning of K-12 curriculum. Answers two questions: (i) how can reading and writing be used as tools to support inquiry-based science, and (ii) how do reading and writing benefit when embedded in an inquiry-based science setting?

Shanahan, T., & Shanahan, C. (2008). Teaching disciplinary literacy to adolescents: Rethinking content-area literacy. *Harvard Educational Review* 78, 40-59. Retrieved from <http://www.uww.edu/conteduc/camps/otherevents/Docs/Papers/Shanahan%20and%20Shanahan%202008.pdf>

Article describes the Shanahans' research into literacy practices in math, history, and chemistry. The authors describe the rationale for focusing on Disciplinary Literacy especially for adolescents.

Additional Resources for Disciplinary Literacy

Books

Borasi, R., & Siegel, M. (2001). *Reading counts: Expanding the role of reading in mathematics classroom*. New York, NY: Teachers College Press.

Three perspectives on reading are presented, highlighting different ways that reading can enhance mathematics learning. Classroom application showing the range of texts, strategies, and reading practices teachers can use.

Ferriter, W., & Gary, A. (2010). *Teaching the iGeneration: Five ways to introduce essential skills using web 2.0 tools*. Bloomington, IN: Solution Tree Press.

Serves as a fine primer for "digital literacy."

Kletzien, S. B., & Dreher, M. J. (2004). *Informational text in K-3 classrooms*. Newark, DE: International Reading Association.

Gives teachers suggestions for using informational books with children to introduce them to book features, academic vocabulary, and expository text structures. Contains ideas for comprehension and informational writing.

Litman, C., & Greenleaf, C. (2008). Traveling together over difficult ground: Negotiating success with a profoundly inexperienced reader in an Introduction to Chemistry class. In K. Hinchman & H. Thomas (Eds.), *Best practices in adolescent literacy*. New York: Guilford.

Chapter in a useful book that also includes information about reading complex texts in social studies and science. Gives specific ways that students can be helped to become more capable with disciplinary texts.

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Wineburg, S. (2001). *Historical thinking and other unnatural acts: Charting the future for teaching the past*. Philadelphia: Temple University Press.

Excellent text that explains why we study history and what challenges it presents for students and teachers.

Journal Articles and Reports

Baer, J. D. (2006). *The literacy of America's college students*. Washington, D.C.: American Institutes for Research. Retrieved from http://www.air.org/focus-area/education/index.cfm?fa=viewContent&content_id=636

Report of research study examining graduating students (from 2-year and 4-year institutions) in prose literacy, document literacy, and quantitative literacy. Using the National Assessment of Adult Literacy, results indicate no difference in quantitative literacy from previous generations, but current graduates are superior to earlier generations in prose and document literacy.

Carnegie Council on Advancing Adolescent Literacy. (2010). *Time to act: An agenda for advancing adolescent literacy for college and career success*. New York, NY: Carnegie Corporation of New York. Retrieved from http://carnegie.org/fileadmin/Media/Publications/PDF/time_to_act_2010_v_3.pdf

Capstone report of Carnegie Council for Advancing Adolescent Literacy. Provides steps for leaders at all levels to improve adolescent literacy.

Fisher, D., & Ivey, G. (2005). Literacy and language as learning in content-area classes: A departure from “every teacher a teacher of reading.” *Action in Teacher Education*, 27, 3-11.

Description of how Disciplinary Literacy is different from “reading in the content areas” with examples from physics and physical education. Gives five principles to encourage disciplinary literacy in every class.

Greenleaf, C. L., & Hinchman, K. (2009). Reimagining our inexperienced adolescent readers: From struggling, striving, marginalized, and reluctant to thriving. *Journal of Adolescent and Adult Literacy*, 53(1), 4-13. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1598/JAAL.53.1.1/abstract>

Description of a secondary school student who recreates his image as a reader through working through texts out of school that are important to him and how his teachers used this to help him access academic texts.

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Greenleaf, C. L., Litman, C., Hanson, T., Rosen, R., Boscardin, C. K., Herman, J., . . . Jones, B. (2011). Integrating literacy and science in biology: Teaching and learning impacts of reading apprenticeship professional development. *American Educational Research Journal*, 48(3), 647-717.

Presents the results of a study examining the effects of professional development integrating academic literacy and biology instruction on science teachers' instructional practices and students' achievement in science and literacy.

Hall, K. M., & Sabey, B. L., (2007). Focus on the facts: Using informational texts effectively in early elementary classrooms. *Early Childhood Education Journal*, 35(3), 261-268.

Authors suggest several research-based strategies to help children understand and learn from informational texts.

Hapgood, S. & Palincsar, A. S., (2007). Where literacy and science intersect. *Educational Leadership*, 64(4), 56-60. Retrieved from <http://district.auburn.cnyric.org/departments/science/Where%20Literacy%20and%20Science%20Intersect.pdf>

Provides ideas for integrating science and literacy in elementary classrooms.

Haynes, M. (2011). *Engineering solutions to the national crisis in literacy: How to make good on the promise of the Common Core standards*. Washington, D.C.: Alliance for Excellent Education. Retrieved from <http://www.all4ed.org/files/EngineeringSolutionsLiteracy.pdf>

Presents data from NAEP and PISA testing showing that American adolescents are not performing well in literacy and suggesting that adherence to the Common Core standards can help address this problem. Gives possible reasons for the lack of achievement and describes policy decisions that can make a difference.

Kamil, M. L., Borman, G. D., Dole, J., Kral, C. C., Salinger, T., & Torgesen, J. (2008). *Improving adolescent literacy: Effective classroom and intervention practices: A Practice Guide* (NCEE #2008-4027). Washington, DC: U. S. Department of Education. Retrieved from http://ies.ed.gov/ncee/wwc/pdf/practiceguides/adlit_pg_082608.pdf

Guide presenting several evidence-based recommendations that teachers can use to increase the literacy levels of their adolescent students. Includes references to the research supporting these recommendations.

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Moje, E. B. (2007), Developing socially just subject-matter instruction: A review of the literature on disciplinary literacy teaching. *Review of Research in Education*, 31, 1-44. Retrieved from <http://blog.lib.umn.edu/cehd/teri/Moje2007.pdf>

Long article describing the research that had been done on Disciplinary Literacy up until 2006. Focus is on combining socially just instruction with Disciplinary Literacy.

Moss, B. (2005). Making a case and a place for effective content area literacy instruction in the elementary grades. *The Reading Teacher*, 59(1), 46-55.

Gives ways that elementary teachers can integrate literacy instruction within content areas.

Neuman, S. B., & Dwyer, J. (2009). Missing in action: Vocabulary instruction in Pre-K. *The Reading Teacher*, 62(5) 384-392.

Review of the importance of vocabulary instruction and development in pre-school. Analysis of strengths and weaknesses of ten common curriculum programs and suggestions for vocabulary instruction in Pre-K.

Websites

[American Association of School Librarians Standards for the 21st Century Learner](#)

Standards and suggestions for teachers in helping students with information literacy.

[International Reading Association](#)

Information, resources, publications for all teachers concerned with literacy.

[National Council for the Social Studies](#)

Information, resources, lesson plans, publications and professional development for social studies teachers.

[National Council of Teachers of English](#)

Information, resources, ideas for lessons, publications, and professional development for English teachers.

[National Council of Teachers of Mathematics](#)

Resources, lesson plans, ideas for instruction, information and publications for mathematics teachers.

[National Science Teachers Association](#)

Lesson plans, videos, professional development and information for science teachers.

[Pennsylvania Standards Aligned System](#)

At this site, teachers can find the Common Core standards, assessments, ideas for instruction, and lesson plans aligned with the standards.

[Reading Apprenticeship](#)

Reading Apprenticeship is one of the leading programs for fostering Disciplinary Literacy. This site explains the program and provides many resources for teachers who want to understand more about how to teach content through disciplinary literacy.

[ReadWriteThink](#)

This website, jointly sponsored by International Reading Association and the National Council of Teachers of English, provides many ideas for teachers and for parents in promoting literacy. It includes lesson plans as well as student interactives.

[Thinkfinity](#)

This website provides information, activities, videos, audio files, and lesson plans from ten different content partners – including ReadWriteThink (International Reading Association and National Council of Teachers of English), Science NetLinks (American Association for the Advancement of Science), History Explorer (Smithsonian Museum of American History), Xpeditions (National Geographic Society), Illuminations (The National Council of the Teachers of Mathematics) and others.

Part IV: Implementing the Plan

In summer, 2011, The Striving Readers Steering Committee met to discuss implementation of the Comprehensive Literacy Plan (CLP). They began by identifying the resources, materials, and policies currently available in PA that would assist schools in implementation efforts and then made recommendations that they believed are essential if the CLP is to be understood and also fully implemented. The results of their discussion are displayed in the following table.

“Vision without action is merely a dream; action without vision just passes the time; Vision with action can change the world...

~Joel Arthur Barker

<http://www.quotes.net/quote110490>

What PA/PDE Has in Place	Recommendations
Standards and Goals	
PA Learning Standards from Birth to 12.	Clearer alignment and articulation of Standards
Adoption of Common Core State Standards and development of transition tools	Professional development to deepen understanding of standards and curricular connections for all stakeholders (schools, community agencies, universities, parents)
Standards Aligned System (SAS) that integrates standards with instruction and assessment available on website	Professional development and technical assistance to increase knowledge and use of available resources, including curriculum mapping tool, curriculum frameworks, assessment tools, instructional resources and transition documents
	Increase rigor in meeting standards (PA) with commitment to high expectations for all students
Assessment	
PA State system of assessments including PA System of School Assessment, Keystone End of Course Exams in Literature and Composition, Classroom Diagnostic Tool	Professional development to assist schools in making better use of formative assessment for instructional decision making

What PA/PDE Has in Place	Recommendations
<p>Assessment tools including PA Value Added Assessment System and eMetric sites</p> <p>Ongoing work to develop appropriate assessments for pre-school children</p> <p>Resources – materials and ideas on PDE website available for schools</p>	<p>Provide support to support teachers in accessing longitudinal data about students</p> <p>Professional development for teachers and administrators that focuses on:</p> <ul style="list-style-type: none"> • Deeper understanding of assessments, interpreting and using assessment data, and greater understanding of what specific assessments do or do not indicate. • Increasing awareness of and understanding of student achievement data <p>Assist school districts in developing a relevant, coherent, and systematic plan of assessment.</p>
Partnerships: Establishing Connections Between schools, parents, community agencies, etc.	
<p>Resources for parents and other community agencies available on SAS/OCDEL websites</p> <p>Many different partnerships exist between PDE, schools, and agencies that support educational work</p>	<p>Continue to develop new partnerships and strengthen ones currently in existence. Encourage partnerships with businesses, for example.</p> <p>Strengthen partnership between higher education institutions, PDE, and schools by developing better communication system to inform higher education personnel of current policies and procedures</p> <p>Increase awareness and usage of available resources to engage families in literacy activities</p> <p>Increase outreach to parents and communities, especially to develop a better understanding of the Comprehensive Literacy Plan</p> <p>Leverage resources available in schools, with more coherence between and among initiatives</p>

What PA/PDE Has in Place	Recommendations
Instruction and Intervention	
Resources and ideas available electronically on SAS/PDE websites	Increase awareness of and ability to access electronic resources of all stakeholders
Well-developed approach for differentiating instruction (Response to Instruction and Intervention in PA) with available electronic and print resources	Improve quantity of quality resources available for schools, especially in the areas of writing, speaking, listening, and disciplinary literacy
Staff development about literacy (Birth-grade 12) available from most IUs and PaTTAN	Professional development that builds teacher and administrator knowledge of evidence-based, rigorous instruction, especially as conceptualized in the Comprehensive Literacy Plan. Such professional development should assist schools in building a systematic instructional program – that includes effective core instruction and a well-coordinated set of interventions
Provision of coaching support with many of the literacy initiatives in the state	
State sponsored initiatives for increasing effectiveness of literacy instruction, e.g., LETRS, Literacy Design Collaborative, Reading Apprenticeship, Reading Recovery	<p>Increase efforts to provide support to schools attempting to improve teaching of disciplinary literacy through professional development that is systemic and school-based (not focused on individual teachers). Such professional development should provide for multiple levels of staff development for content teachers, teacher leaders and administrators with processes built in for reflective practice.</p> <p>Build knowledge and understanding of college and university faculty about components of the Comprehensive Literacy Plan</p>

Leadership	
<p>Striving Readers State Literacy Leadership and Steering Team that developed the Comprehensive Literacy Plan</p> <p>Professional development that targets school/district administrators (PA Inspired Leadership)</p> <p>Instructional Coach Credential available</p> <p>Certification credential for Directors of Early Childhood Programs available</p> <p>School Improvement Plan in place for schools in PA</p>	<p>Continue leadership team to serve as an advisory committee for the ongoing implementation of the Comprehensive Literacy Plan</p> <p>Develop a general email address or central communication plan for all school districts to keep contacts up to date.</p> <p>Provide support for and professional development that assists schools in building programs that provide for alignment among standards, instruction, and assessment (reduce numbers of initiatives in schools)</p> <p>Expand professional development for administrators related to quality literacy curriculum, instruction and assessment; professional development that helps them recognize and support quality literacy practices</p> <p>Professional development for teachers and other informal leaders in schools that builds an understanding of the importance of schools as a place of learning for teachers and students (schools as communities of learning)</p>
Professional Learning	
<p>New certification requirements for teachers that include a PreK-4 certificate.</p> <p>Continuing education requirements for all educators that provide for options (electronic learning, etc.)</p> <p>Teacher induction program for new educators</p>	<p>Professional Development needs for teachers and other school personnel especially as related to the CLP:</p> <ul style="list-style-type: none"> • Emergent literacy and how it can be enhanced in early childhood programs and in homes • Teachers as informal literacy leaders (shared leadership in schools) • Disciplinary literacy

	<ul style="list-style-type: none"> Highlight Guiding Principles and Essential Elements of the CLP <p>Work with institutions of higher education and with the Higher Education Division at PDE to build deeper understanding of the CLP for inclusion in teacher /administrator preparation programs</p>
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Later in the summer, the Striving Readers Leadership Team met to develop an Action Plan for implementing the Pennsylvania Comprehensive Literacy Plan. This action plan specifies action steps, those responsible for the action, deliverables, and a time frame for accomplishing each of the action steps. The action plan is presented in the following table.

Action	Deliverable	Responsible	Time Frame
Approval from PDE and posting on PDE Website	Comprehensive Literacy Plan is posted on PDE Website	LT/PDE	September, 2011
Conduct a Focus Group to get feedback on Plan	Recommendations for implementation and professional development focus	LT	Fall, 2011 September 19, 2011
Develop a Communication Plan for introducing the plan to various entities	Communication Plan is developed (Penn-Link, podcast, webinar, etc.)	LT	Fall, 2011
Develop professional development modules (assign to key personnel)	Modules developed for each entity. (PowerPoint, Trainer Notes, Brochures)	LT, PAIUCC, PaTTAN, SR Steering Committee, OCDEL, PDE	Winter, 2012
Develop needs Assessments for school district actions and supports	Needs Assessment Instrument	LT	Fall, 2011/Winter 2012

November 2011 Edition

Conduct Train the Trainers sessions for the modules	Region professional development sessions conducted across the state for all stakeholder groups; trainers identified	PaTTAN/ IUs Higher Education	Spring, 2012
Develop a timeline for roll outs			

Code: LT = Leadership Team

PDE – Pennsylvania Department of Education

PAIUCC – Pennsylvania Intermediate Unit Curriculum Coordinators

PaTTAN – Pennsylvania Training & Technical Network

OCDEL – Office of Child Development & Early Learning

SR – Striving Readers

Appendix: Analysis and Assessment Plan

Districts, schools, and classrooms generate large amounts of data on a daily basis. Students are often asked to demonstrate what they have learned through classroom based assessments, district assessments, or on state assessments, but how often are the results of those assessments used to guide instruction for students? Generating data does not guarantee that the information is used or even reviewed. In an effort to make informed decisions about the educational opportunities available to students, educators should purposefully select assessments and deliberately use the data. Facilitating the concerted generation and analysis of data can be accomplished by implementing an assessment plan which describes assessments and their application, uses a data cycle for conceptualizing the data analysis process, and provides a structured forum for data analysis.

Developing an Assessment Plan

It is easy to identify the assessments given in any school, but it is more difficult to determine why those assessments are given and how the results are used. Therefore, it is beneficial to think about creating an assessment plan that takes into account the purpose for assessments, as well as a description of how those results are to be used.

Determining What Needs to be Assessed

In order to turn data into actionable information deliberate and purposeful planning needs to occur prior to test administration. First, determine what needs to be assessed. As it is often said, what is assessed is often what is taught. Identifying the instructional goals can clarify the content that needs to be assessed. When prioritizing content for assessments, consider district and state standards as well as grade-level and content specific big ideas.

Selecting Appropriate Assessments

After the content has been selected, tests and other assessment measures should be identified. It may be helpful to create a chart of the assessments given at each grade-level with their purpose for administration and a brief synopsis of how the data will be used. The charts can provide a visual representation of all of the assessments students will take in any given grade. It is imperative that the charts are analyzed to ensure that the data is used in the intended manner and to avoid duplication of assessments.

Grade	Assessment	Purpose	Use of Data	Date of Administration	Taken By
7	PSSA/ PASA/ PSSA-M	State assessment	Alignment of programs and curriculum	March - April	All students
	4Sight	Benchmark assessment	Monitor progress of groups within curriculum and programs	Quarterly	All students
	CDT	Diagnostic assessment	Identify individual strengths and needs; flexible groups	September, December; May	All students

Excerpt of a grade-level assessment plan

Aligning Assessments and Instructional Priorities

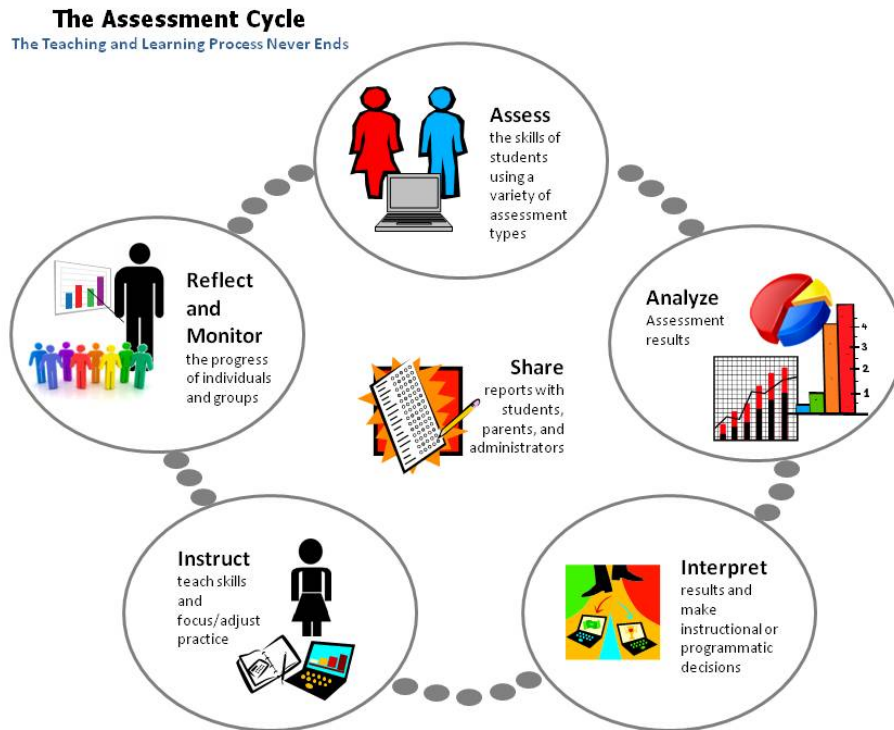
If an assessment is given and the results are not used, that assessment should be further examined. Is it because the results are not communicated in a timely manner; is it because there is not a clear understanding of how to interpret the results; or is it because there are other assessments that generate the same information? Each of those answers leads to a different solution to address the unused data.

The development of an assessment plan provides a mechanism to check that instructional priorities are assessed and that the assessments are used for making decisions. If something is important enough to assess, the results should be used.

The Assessment Cycle

Once assessments have been selected and administered, it is important to analyze and interpret the data. The assessment cycle emphasizes what should occur after an assessment has been administered. During the analysis phase, assessment results are examined to look for patterns and trends within the data. After patterns and trends have been identified, results are interpreted and used to make instructional decisions. During the interpretation phase, results from other assessments should be used to validate current results and conclusions. The information gained from analysis and interpretation is used to provide focused instruction aligned to areas of academic need and the development of academic strengths. Prior to additional assessments, the progress of students should be monitored and explored. This task can be accomplished through the use of formative assessments or observations. Throughout the cycle, the results of the assessments, as well as the rationale for additional instruction, should be shared with students, parents, and administrators as appropriate.

Figure 4: The Assessment Cycle

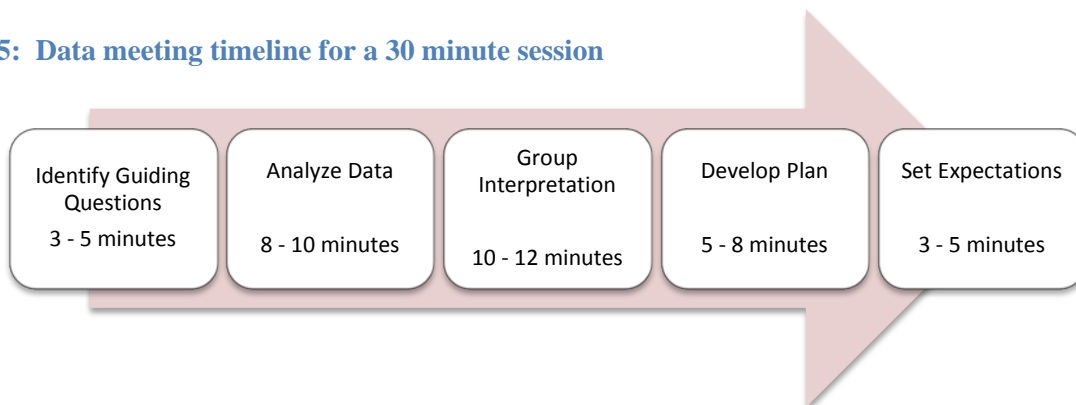


(Adapted from the CDT Core Team Assessment Cycle)

Data Team Meetings

The data analysis process has a specific purpose for reviewing and analyzing data. Groups of educators collaborate to develop a plan to address identified needs and to support or replicate identified strengths. During the meeting, the bulk of the time should be devoted to group analysis and plan development. Groups should be careful to not spend so much time reviewing the data that they never get to developing plans. At the end of each meeting, expectations are set for the following meeting. Some data teams find it helpful to assign roles during each meeting such as data compiler/ guide, timekeeper, recorder, and meeting leader.

Figure 5: Data meeting timeline for a 30 minute session

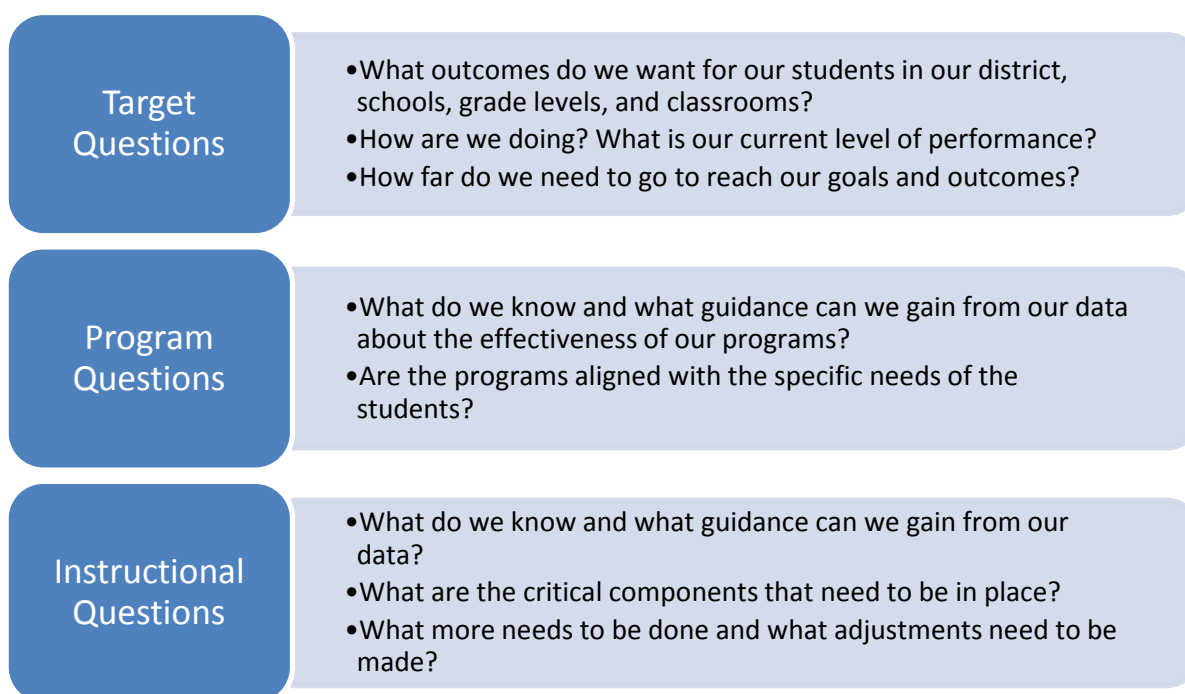


Identify Guiding Questions

Guiding questions are used to set a goal for the meeting; they provide the purpose for looking at data. As such, they also establish the context from which to view the data and provide a focus for the meeting. Using guiding questions enables participants to look for specific data trends, identify areas of strength and need, or to establish a parameter for discussing programmatic or curricular feedback.

When developing guiding questions, there are several areas that can be used to focus the data analysis. For example, questions can address achievement targets, outcome goals, or instructional implications. Each data analysis session should have a clear guiding question in order to keep the meeting on target. The guiding question should be selected prior to the meeting and then explained to the participants once the meeting begins. It may be helpful to post the guiding question so that it remains the focus for the entire session.

Figure 6: Sample guiding questions



Analyze Data

Prior to the meeting, data should be selected and packaged for the review. Participants should each be provided with a copy of the data to review in the context of the guiding question. Every participant should be comfortable with the data and able to interpret the report prior to the meeting so that the focus of the meeting remains on the analysis.

During the review phase, the discussion focuses on the data. Because conjecture and hypothesizing occurs during the interpretation phase, every effort should be made to keep the discussion focused on what is seen within the data. When making statements, participants should be encouraged to reference the data. If the discussion veers off-topic, the moderator can refocus the group by bringing the discussion back to the guiding question or by probing statements further by asking participants to “point to the data” they are discussing.

Group Interpretation

In the interpretation phase, members discuss the trends that they are seeing in the data relative to the guiding question. Additional sources of data may be consulted to confirm or refute proposed hypotheses that have been generated based on the data.

Root cause analysis may be part of this step if the guiding question warrants a root cause analysis. Root causes are the underlying cause of a data strength or concern that if addressed would explicitly affect the strength or concern. See Preuss (2003) for the root cause processes, e.g., force field analyses, the 5 why’s, a fish bone activity.

Develop a Plan

Once the interpretation step is complete, teams should develop a plan based on the conclusions drawn from the data to address the guiding question or impact instruction. It may be helpful for data team members to collaborate and share resources to improve instruction relative to the data and guiding question.

Set expectations

Based on the plan that was developed, team members determine what will be done before the next meeting. Teams may need to consider the following: Do we need to collect additional data?; What short-term tasks should we accomplish before the next meeting?; and, What supporting artifacts will be shared at the next meeting?

The implementation of an articulated assessment and analysis plan can help educators move from data to information. The information can then be used to support program and curricular choices, as well as impact and affect instruction. By selecting specific assessments, articulating their purpose, and using the data to drive instruction schools can capitalize on resources they already have while at the same time provide customized educational experiences for their students.

Reference

Preuss, P. (2003). *School leader’s guide to root cause analysis: Using data to dissolve problems*. New York: Eye on Education.